AUGUST 19, 1944

Railway Age

Founded in 1856

THE LIBRARY OF CONGRESS SERIAL RECORD
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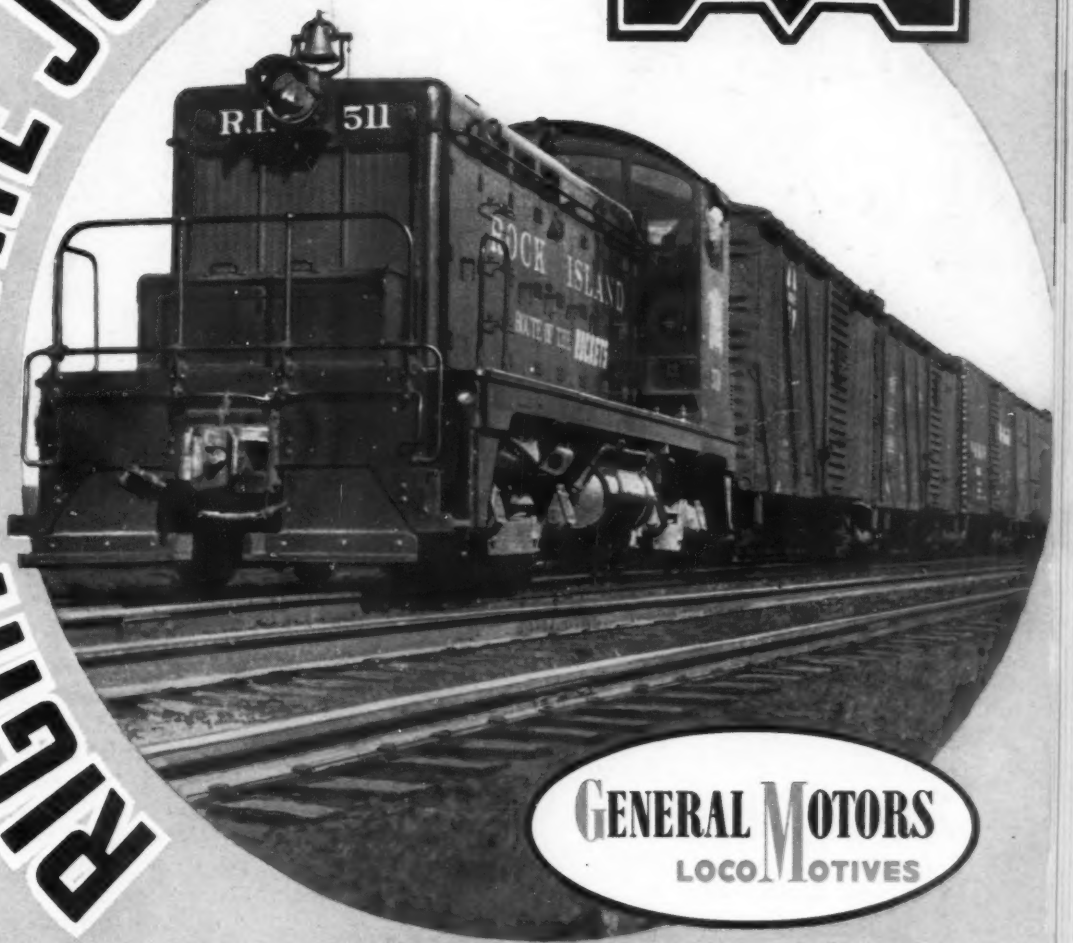
RIGHT ON THE JOB on the Rock Island



GENERAL MOTORS LOCOMOTIVES

WITH typical operating efficiency, the Rock Island continues its outstanding job with General Motors Diesels in switching service. Since May 1937, forty-five General Motors Diesel switchers have been placed in this service and have operated over two million hours with an availability record of 95 per cent.

★ BACK THE INVASIONS—BUY MORE WAR BONDS ★

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION LA GRANGE, ILLINOIS, U.S.A.

PORTER DIESEL ELECTRIC

{80 TON SWITCHER}

Another Important Porter Development!

A brand new idea in hood construction and door arrangement provides easy access to engines through full double-door openings. The frameless hood is constructed entirely of formed sheets, thus eliminating angles and stanchions, and affording unobstructed access to power plants. Service men can work on one of the two independent power units while the locomotive is operating on the other, thus adding to its availability. Full description on request.

ARMY E NAVY

PORTER "Better Built" Equipment
Established 1866

LOCOMOTIVE DIVISION:
Diesel, Diesel-Electric, Electric, Steam, and Fireless Steam Locomotives.

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Agitators, Mixers, Blenders, Autoclaves Kettles, Pressure Vessels, Driers, Ball and Pebble Mills.

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PITTSBURGH, PENNSYLVANIA
FACTORIES:
PITTSBURGH, PA. • BLAIRSVILLE, PA. • MT. VERNON, ILL.
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Projections of the spectrum of a steel sample being studied by the spectroscopist.

The Case Against "Tramp" Elements

Ten minutes after a sample of steel is delivered to the Inland laboratory its chemical content is clearly and permanently recorded on spectrographic film. This film is greatly enlarged by projection, and is studied by the spectroscopist. There is not a chance for any "tramp" element to pass undetected.

The apparatus by which these checks are made is known as a spectrograph. A small specially prepared sample of steel is placed in the apparatus, where it is quickly vaporized by an electric arc, and the spectrum recorded on photographic film.

Inland uses the spectrographic laboratory for frequent and rapid tests while heats are being made. But this is only one of the many methods used by Inland to control the quality of steel—steel that is uniform from order to order—steel that is easily fabricated with minimum wastage.

Sheets • Strip • Tin Plate • Bars • Plates • Floor Plates • Structurals • Piling • Rails • Track Accessories • Reinforcing Bars

INLAND STEEL COMPANY

38 S. Dearborn St., Chicago 3, Ill.

Branch Offices: **Cincinnati • Detroit • Kansas City • Milwaukee • New York • St. Louis • St. Paul**

G-E lamps can help provide plenty of "seeing" light and create cheerful atmosphere in postwar lounge cars. Passengers will enjoy traveling like this! "The Mercury"—New York Central System.

DON'T FORGET . . . the aim of General Electric Lamp Research is to make G-E Lamps *Stay Brighter Longer*

G-E MAZDA LAMPS

GENERAL ELECTRIC

Hear the General Electric radio programs: "The G-E All-Girl Orchestra", Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

BUY WAR BONDS AND HOLD THEM

Distinguished service medal earned by many locomotives!

WE are proud to have had a part in the servicing of over 200 railroads whose locomotives have met the strenuous demands of wartime traffic.

Dearborn's water treatment and service have eliminated locomotive shoppings for boiler repairs caused by scale, corrosion, and foaming, with the result that more locomotives have been made available for 'round the clock duty . . . turning and doubling back without costly delays for boiler washouts or boiler repairs.

On Dearborn-serviced railroads, locomotives take full throttle over long distances through many water districts.

Dearborn engineers make a study of each water station in cooperation with the road's own water chemists or independently, and advise expertly on all water treatment problems. Chemical formulas differ to meet the conditions at each water station and are formulated to neutralize scale forming characteristics and the tendency toward foaming. All chemicals including the new type Amine Anti-foam are proportioned at wayside stations and utilize existing equipment without change or addition.

The Dearborn engineer in your vicinity will be glad to discuss a complete water treatment plan for your road or for any one division.

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Dearborn

TRADE MARK REGISTERED

BOILER WATER TREATMENT AND SERVICE

EDGEWATER
RING SPRING
DRAFT GEAR

Utmost protection to car and lading is provided by the even cushioning of Edgewater Ring Spring Draft Gears.

For two years, Edgewater Ring Springs have been protecting delicately engineered airplane structures from the battering impacts of heavier and heavier armaments. The same principle is applied to the protection of car structure and lading by the Edgewater B-32-KA Ring Spring Draft Gear.

EDGEWATER STEEL COMPANY • PITTSBURGH, PA.

From the Firing Line to the Main Line

Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y.
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INDUSTRY'S "PROBLEM CHILDREN" Expertly Handled by DoALL Zephyr!

VERSATILE

SPEEDY

COURAGEOUS

Is one word for the Zephyr. When equipped with the proper DoALL Saw Band, it cuts its way through anything spongy, flinty, glass-like, porous, any product that presents cutting difficulties.

With a 36" throat, a work thickness capacity of 20" and a 30" square tilting table, the Zephyr accommodates large castings and die blocks as well as parts of unusual length.

Speedmaster equipped, to give instant variable speeds from 1500 to 10,000 f. p. m., jobs can be turned out in one-half to one-third the former time.

Designed and constructed to well-nigh do the impossible, the Zephyr boldly tackles cutting jobs from which other machines shy away.

Yes, you should know more about the DoALL Zephyr. Send for illustrated literature today.

Developed by the makers of the famous DoALL Contour Machines for faster, cleaner cutting and shaping of today's new materials, as well as some tough old-timers.

- **Magnesium**
- **Aluminum**
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- **New Plastics**
- **Laminates of all Kinds**
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DoALL

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DOING TWO BIG JOBS AT ONCE!

THE railroads' "Number one" job is to move wartime freight and passengers at speeds and in quantities never dreamed of before. Their "Number two" job is to maintain and improve service and keep trains on schedule in spite of floods and storms.

"Caterpillar" Diesel Tractors are helping them do both of these jobs at once. These powerful units work independently and leave the track clear for uninterrupted train operation. They don't have to be side-tracked, nor do they have to stop their own job to allow trains to pass.

"Caterpillar" Diesels fit in with war economy. They use only small quantities of low-cost fuel. They save manpower. One tractor and one operator can often accomplish as much in a day as a whole work train. They save time that is vital to Victory.

Yet with all these advantages, "Caterpillar" Diesel Tractors can handle every MW job from filling a culvert to grading a new right of way.

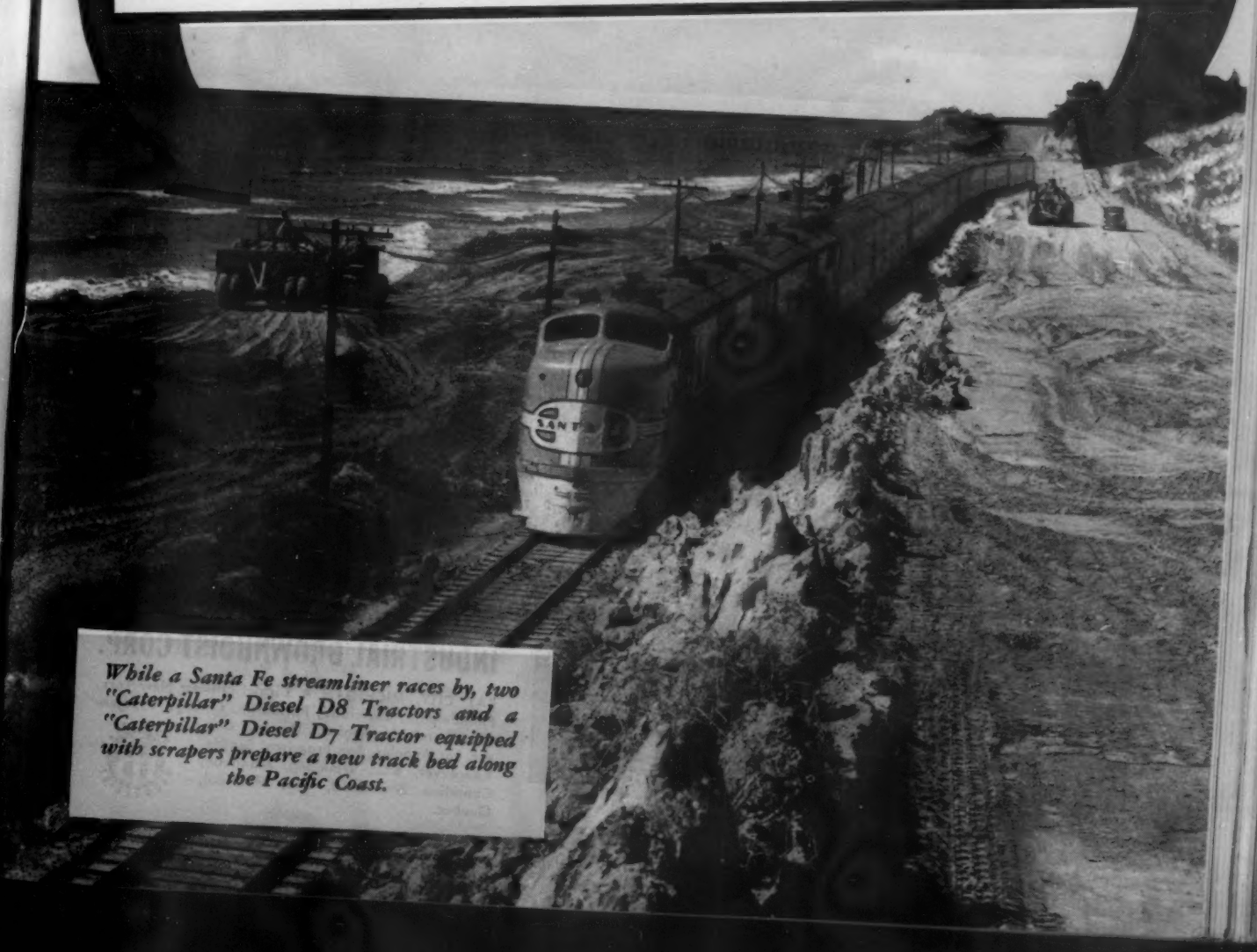
These powerful machines have chalked up some remarkable records for efficiency, economy and "work done." The facts and figures are free for the asking. Write for them.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

CATERPILLAR DIESEL

REG. U.S. PAT. OFF.

TRACTORS • ENGINES AND ELECTRIC SETS • EARTHMOVING MACHINERY



While a Santa Fe streamliner races by, two "Caterpillar" Diesel D8 Tractors and a "Caterpillar" Diesel D7 Tractor equipped with scrapers prepare a new track bed along the Pacific Coast.

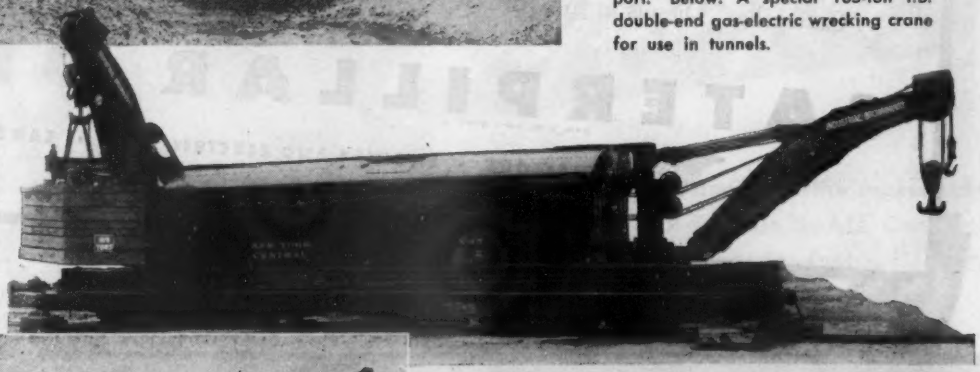
If it's heavy material handling equipment you need,

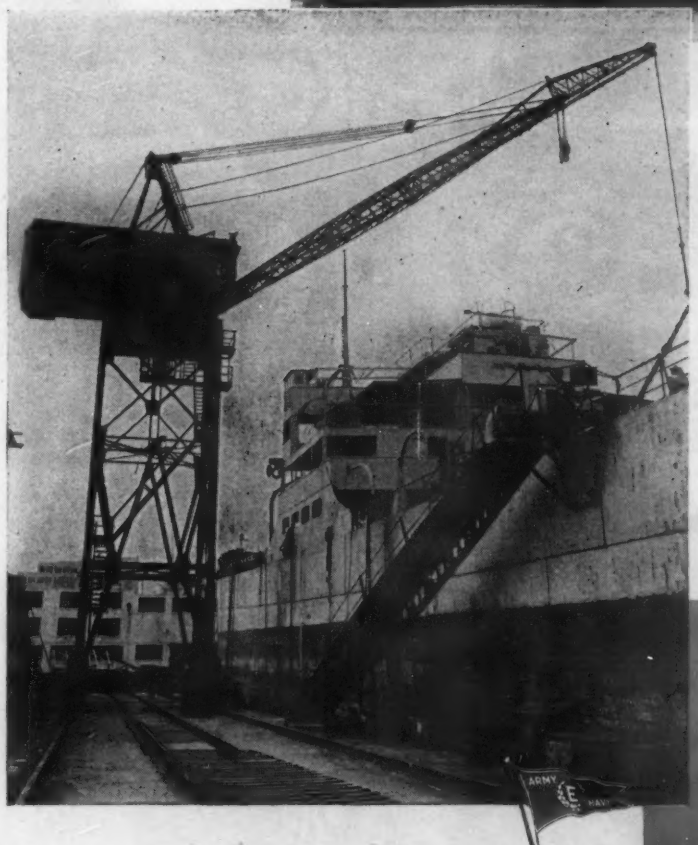
INDUSTRIAL BROWNHOIST knows how to design and build it.

Here at Industrial Brownhoist we design and build some of the world's largest equipment for the efficient handling of heavy materials.

The Industrial Brownhoist Coal-Handling Bridge at the left is typical. With a 300 ft. span and a raisable apron extending 110 feet out overall, this bridge transfers coal from boats to cars and storage piles at an inland port. Below: A special 105-ton I.B. double-end gas-electric wrecking crane for use in tunnels.

Below is another example of the wide variety of equipment designed and built by Industrial Brownhoist. This Diesel Electrically Operated Traveling Tower Crane handles 35 ton loads at a 90-foot radius in a large East-coast shipyard.

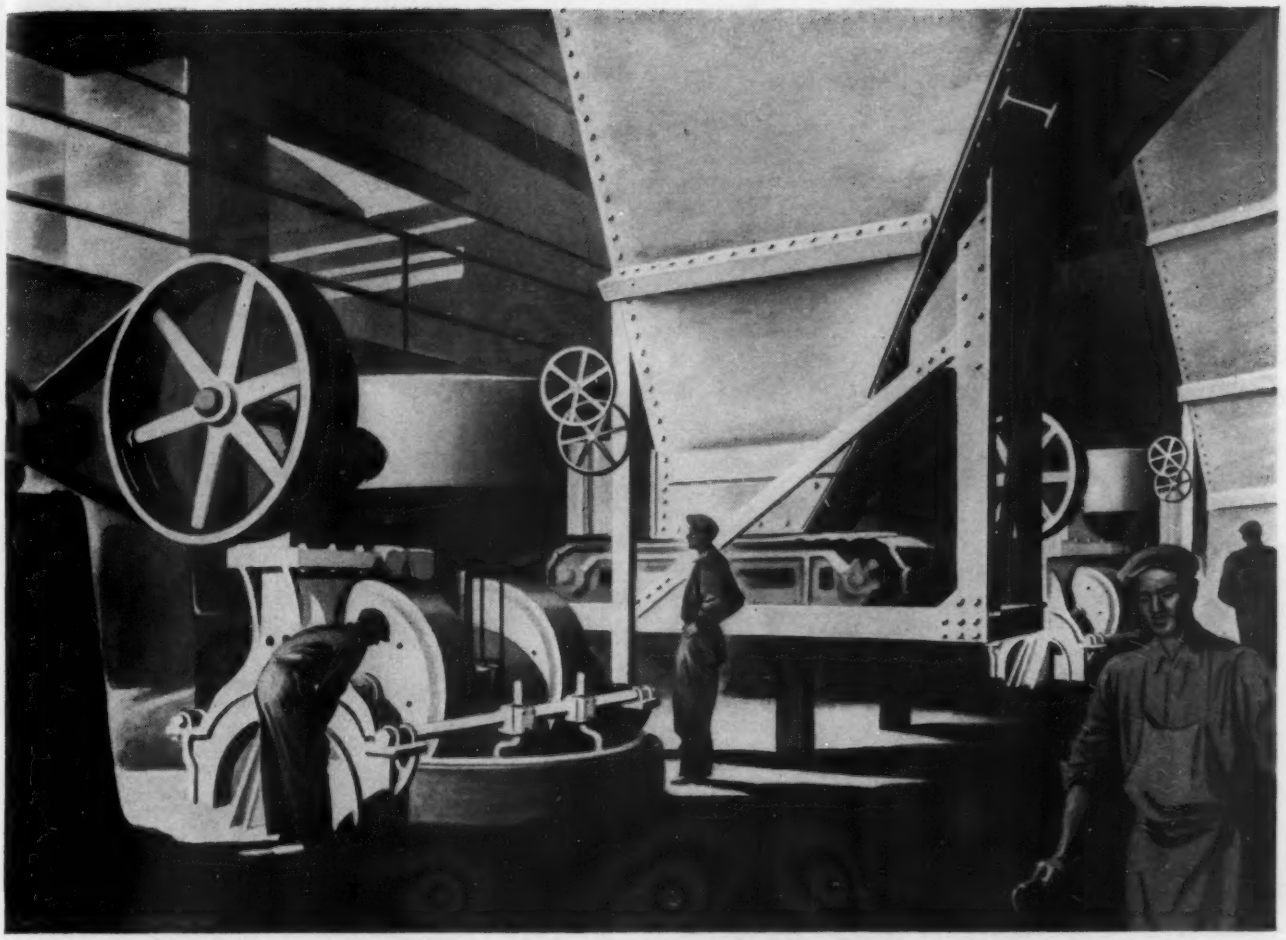




Below: Industrial Brownhoist gas or Diesel Locomotive Cranes, from 20 to 50 tons, are well-known for their ability to stand up under constant use. Monitor-type cabs give 360° visibility, increase operator efficiency.

INDUSTRIAL BROWNHOIST CORP.

BAY CITY, MICHIGAN • District Offices: New York, Philadelphia, Cleveland, Pittsburgh, Chicago • Agencies: Detroit, Birmingham, Houston, Denver, Los Angeles, San Francisco, Seattle, Vancouver, B.C., Winnipeg, Manitoba, Canadian Brownhoist, Ltd., Montreal, Quebec.



In ceramic production Stainless Steels, Nickel, Monel, and Nickel Alloyed Castings are used in many special applications.

NICKEL AIDS THE CERAMIC INDUSTRY

to KEEP 'EM PRODUCING!

Many Ceramic engineers and plant operators have found it necessary skillfully to integrate the best in methods and machines to achieve wartime production.

They made the refractories branch of the industry a War Giant that's striding forward with massive output for keeping metal going on its way to war. In critical war production areas building brick for plant expansions and cement for roads on which millions travel to their wartime tasks have been available in ample quantity and on time.

No essential industry has lacked supplies of ceramics.

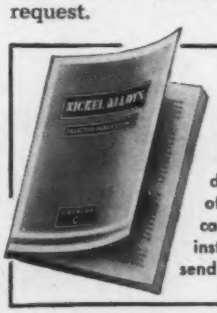
An important aspect in this achievement is the utilization of Nickel Cast Irons, Stainless Steels, Monel and other alloys containing Nickel... to combat the ravages of heat, corrosion and abrasion.

To minimize attendant interruptions of production, ceramic engineers... relying on their long peacetime experience with metals and alloys... made the judicious choice of Nickel alloys.

Their experience had shown them that a little Nickel goes a long way to keep equipment producing.

Nickel imparts hardness, toughness, strength and wear resistance. It fortifies crusher rolls, scrapers and other critical parts of production equipment. Nickel is specified widely in processing mechanisms... such as muller tires, scraper blades, pug mill knives, chute liners and all manner of parts subject to severe abrasive action. Nickel alloyed parts provide long service life... reducing the need for frequent replacement. Thus it is practical for plant operators to increase output and general efficiency... and all this at a very reasonable cost.

For many years it has been our privilege to cooperate with foundrymen and engineers who desired help in the selection, fabrication and heat treatment of alloys. If you'd like to have such assistance... whatever your industry may be... counsel and data are available on request.



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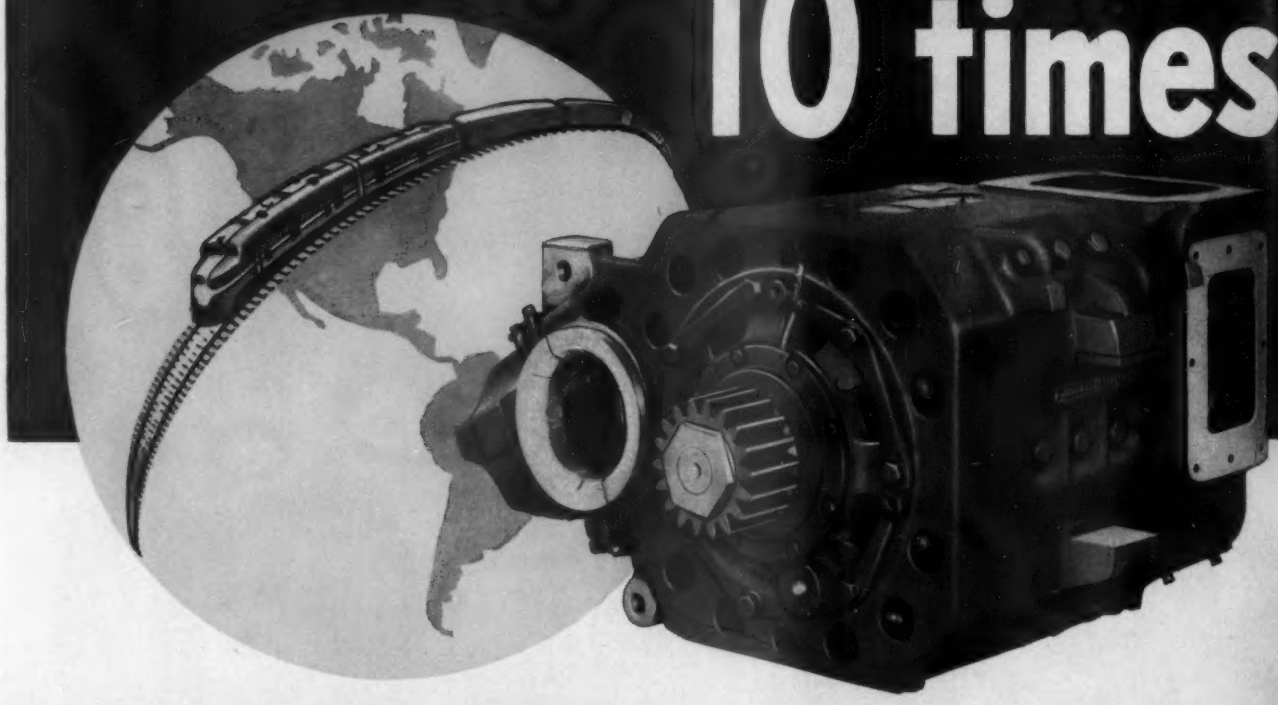


HOW G.E. BUILDS *long* MOTOR LIFE

1 **GRINDING** commutators while they rotate on their own bearings is how G.E. produces the smooth and lasting concentric finish which is essential for good commutation and long brush life.

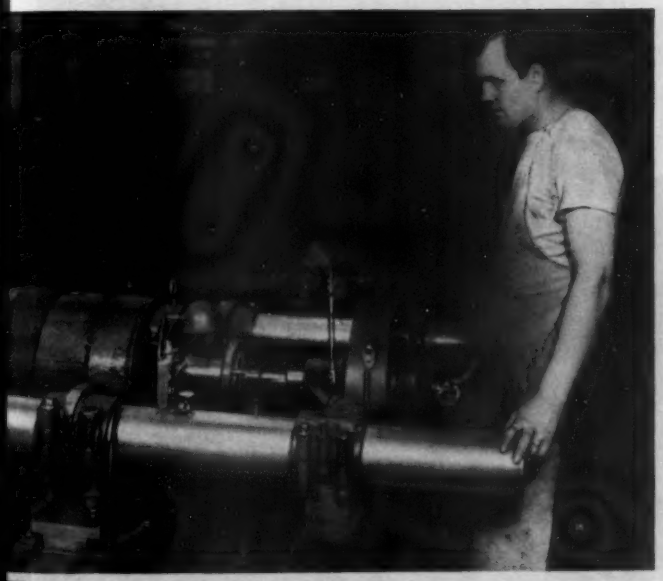
2 **SEASONING** of commutators is an accelerated aging process which assures stability of commutator surface. This contributes to low maintenance, reliable operation, and long life.

Alco GE

AMERICAN LOCOMOTIVE

s around the earth
—with only routine attention

New Haven gets 10 million motor-miles from 10 locomotives before classified motor repairs—one reason for the outstanding wartime record of its Alco-G.E. diesel-electrics



3 **DYNAMIC BALANCING** of the completed armature, essential for smooth, high-speed operation and long life, is a precision operation at G.E. This machine accurately measures the exact weight to be added and indicates its proper location.

4 **TESTING** an assembled G-E traction motor while it is run through its entire operating range. During this test, insulation, bearing temperatures, speeds, and loads are checked for compliance with G-E standards.

WORKING in pairs, handling 16-car passenger trains by day and 4500-ton freight trains by night, the New Haven's first 10 Alco-G.E. diesel-electrics are proving their low maintenance requirements and their ability to withstand intensive wartime service.

Their traction motors have turned in such excellent performance records that the New Haven has increased the periods between Class 3 repairs of its Alco-G.E. diesel-electrics. The highest continuity of service is being assured by the New Haven with a preventive-care program which calls for specific maintenance operations after the locomotives have delivered 250,000 to 300,000 miles.

One reason for the outstanding performance of these motors is that they were designed by men whose lives were spent in the building and application of equipment specifically for transportation service.

When considering new motive power that will meet today's emergencies and, at the same time, provide economies to meet future competition—consult your Alco or G-E representative. We build all three types of motive power—diesel-electric, electric, and steam—and can, therefore, recommend the one that is economically best suited to your particular operation.

119-89-9180

BUY WAR BONDS

and GENERAL ELECTRIC

On roads, rails and
in the sky—in every
land—in every language . . .

Houdaille* means "SHOCK ABSORBER"

Under the positive, dependable and gentle control of soundly engineered and finely built Houdaille Hydraulic Devices, the violent thrusts, vibrations and shocks, to which mechanisms of transportation are subjected, cease to be a hazard or a discomfort.

There is no comparable engineering substitute for the Houdaille Hydraulic shock absorption principle —*that* fact has been dramatically confirmed under present war conditions. And it is inevitable that new and far-reaching Houdaille adaptations of this basically sound principle will increasingly smooth the paths of civilization in the days ahead.

HOUDE ENGINEERING DIVISION OF

HOUDAILLE-HERSHEY CORPORATION

Makers of Hydraulic Controls

BUFFALO 11, NEW YORK

BUY U. S. WAR BONDS

*Pronounced "HOO-DYE"

And Simplicity itself...
The New Schaefer EVER-TITE Wear Plate

The new Schaefer EVER-TITE Wear Plate is easy to install in the side frame bracket. While in service, springs under compression hold it rigidly in place and save wear on the side frame bracket. Simplicity of construction and rugged design make the Schaefer EVER-TITE Wear Plate ideal for high speed freight service.

Schaefer Appliances

STANDARD ON MOST ROADS

LIGHT WEIGHT DESIGN INSURES MORE THAN CAR LIFE

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

READY *for hard continuous work with*

PORUS-KROME*

* PORUS-KROME is pure chromium, applied by the Van der Horst process that produces pores to hold oil. It reduces wear and corrosion and greatly multiplies cylinder life. It is being applied to engine parts in the three Van der Horst plants, and by license agreement.

This engine cylinder, processed with PORUS-KROME, is ready for hard continuous work that would ruin ordinary cylinders and cause a work-stoppage for repairs.

PORUS-KROME is pure chromium, which is inherently resistant to corrosion and wear, applied by the Van der Horst process that produces tiny pores to hold oil and feed it back as needed for lubrication of cylinder surfaces.

Because of these characteristics, cylinders and liners treated with PORUS-KROME last 4 to 20 times as long as ordinary cylinders. Rings last 3 to 5 times longer, too, and risk of piston seizure is reduced to nought.

The discovery of PORUS-KROME made a real contribution to the improvement of internal combustion and steam engines, and progressive engine builders are planning to make use of its advantages in their improved peacetime engines.

May we tell you how PORUS-KROME will add to the reliability of *your* engines?

PORUS - KROME

Good for the Life of your Engines

VAN DER HORST

VAN DER HORST CORPORATION OF AMERICA

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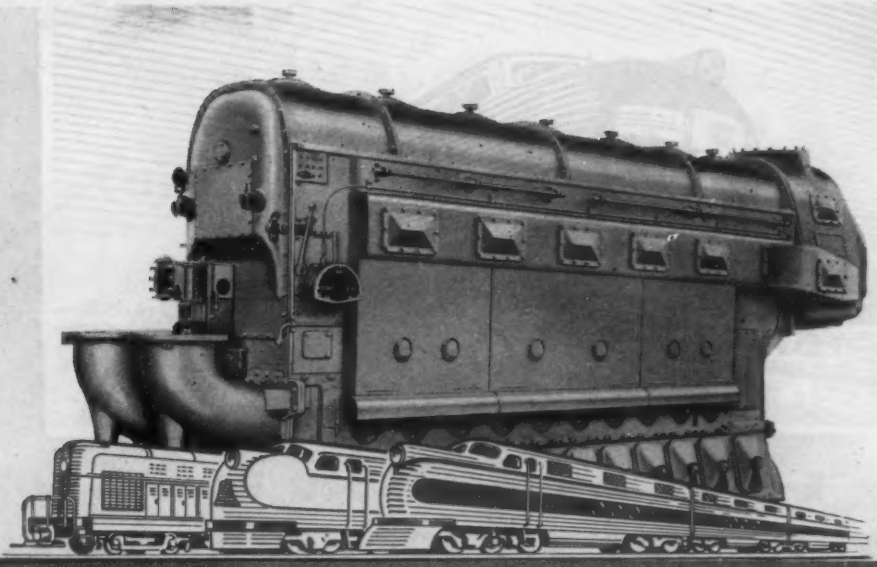


Only 3 Diesels in These 6000-Hp. Locomotives!

YES, in a Fairbanks-Morse 6000-horsepower freight or passenger locomotive there are *only three* Diesel engines, *only three* main generators! This means easier, faster, more economical maintenance and servicing . . . permits greater locomotive assignments.

These great advantages rise from the Fairbanks-Morse opposed-piston Diesel, an engine which uses *two* pistons in each cylinder to develop extra power. More than two million horsepower of these Diesels are now in active service.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

A name worth remembering!

FAIRBANKS-MORSE

E-L OFFERS INCREASED POWER SUPPLY EFFICIENCY FOR RAILROAD TWO-WAY RADIO

REALIZING the greater safety and efficiency which two-way radio can bring to railroad operation, many leading roads are developing radio application to their operations and are making test installations.

One of the big problems encountered in this development is a suitable power supply system for the radio equipment. Power supplies for radio operation is a field in which Electronic Laboratories, with its Vibrator Power Supplies, brings you the widest knowledge and experience available anywhere.

Vibrator power supply systems not only offer the greatest operating efficiency, but they last much longer, and require practically no maintenance or attention. They will convert any input voltage or voltages—32 V DC—64 V DC—110 V DC—or any other—to the voltage which the individual radio may require. E-L has also developed multiple input power supplies which greatly simplify the operation of radio-telephone equipment. These universal power supplies when built into radio-telephones allow operation of the communication system from any existing railroad voltages.

Electronic Laboratories military production for the war effort has set up a tremendous reservoir of experience which will be especially valuable in the railroad field. Mobile military applications almost duplicate railroad requirements. For example, power supplies for two-way radio in both fields differ only in the voltage input. E-L's successful meeting of rugged military requirements means trouble-free and efficient Vibrator Power Supplies for the operation of two-way communications systems for railroads.

E-L engineers are eager to work with railroad development engineers in solving their power supply and related problems in applying two-way radio to their trains. E-L will be glad to discuss your individual requirements and provide sample power supply units for experimentation.

Other E-L vibrator power supplies enable the railroads to offer the conveniences of fluorescent lighting, standard broadcast radio reception and electric razor operation. Vibrator Power Supplies also have wide application in many other fields, radio, marine, electronic and electrical. Their high versatility with multiple input and output voltages enable them to meet many power supply needs.

New developments make 1500 watts capacity easily attainable. They may be designed to provide any wave form needed for specific equipment. Another important and exclusive E-L feature that can be built into your vibrator power supply is constant output voltage, despite wide fluctuations of input voltage. Economy is assured because of long, efficient service with minimum maintenance. E-L Engineering Service is available to discuss your power supply problem and to design a vibrator power supply to meet specific voltage, power, size and weight requirements.

Model S-1050 (shown below) is a typical military model Vibrator Power Supply which may easily be adapted to meet the requirements of railroad use. This E-L unit was designed for the Signal Corps to operate radio transmitters. Input voltage: 12 or 24 volts DC. Output voltage: 475 volts DC at 200 MA, 8 volts DC at 4.5 MA. Dimensions: 9½ x 8⅝ x 13 13/16 inches. Weight: 52 pounds.

Electronic LABORATORIES INC. INDIANAPOLIS

VIBRATOR POWER SUPPLIES FOR LIGHTING, COMMUNICATIONS, AND ELECTRIC MOTOR OPERATION . . . MOBILE ELECTRONIC AND RADIO EQUIPMENT

Over half the Streamliners use WAUKESHA

ENGINE-DRIVEN EQUIPMENT

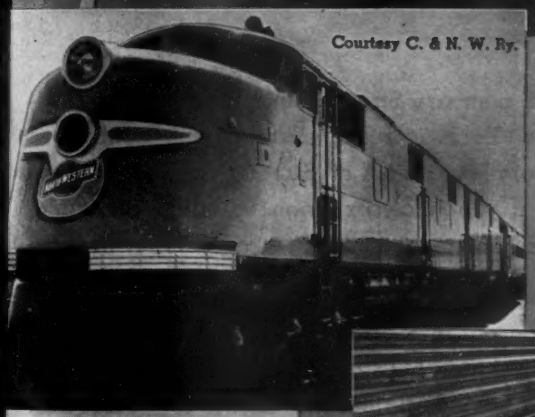
● America's greatest streamliners have luxurious comfort—cooling and lighting—continuous and uniform—supplied by Waukesha Engine-Driven Air Conditioning and Generator Units.

Independent of train movement, weather conditions or location . . . imposing no parasite load on the motive power . . . entirely automatic and serving on demand—these light, economical and dependable engine-driven units have stepped up operating schedules and increased profits.

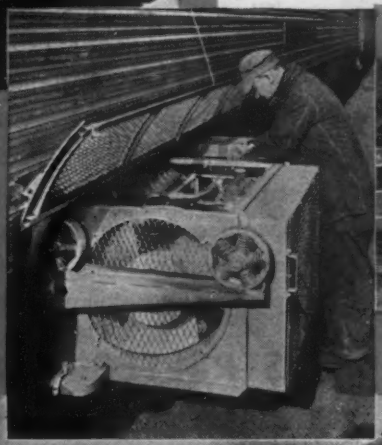
Today's production for the armed forces of similar products in lighter weight mobile and airborne units, will be reflected in future railway designs already in the planning stage.

Future streamliners with Waukesha Railway Equipment will have engine-driven units that are:

1. Lighter in Weight. 2. Even More Reliable. 3. More Economical in Operation. 4. More Easily Accessible for faster routine servicing.



Courtesy C. & N. W. Ry.

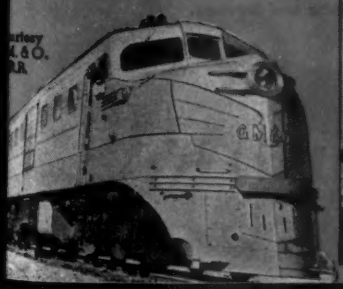


Courtesy Southern Pacific Lines

Courtesy Illinois Central R.R.

Courtesy Union Pacific R.R.

Courtesy The Milwaukee Road



REFRIGERATION DIVISION

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN

Largest Builders of mobile, engine-driven Refrigeration and Generator Equipment

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THESE men are Streeter-Amet field service engineers. Each is responsible for the continuous satisfactory operation of Streeter-Amet recorders. Each is a practical, experienced scale and automatic weigher technician . . . many having over 25 years of background on the same job.

When you put in a Streeter-Amet automatic weight recorder, one of these engineers will be on hand to supervise the installation and he will make frequent return calls to recheck its operations. Streeter-Amet automatic weight recorders are accurate, dependable precision instruments. This corps of field service engineers gives you double assurance of complete satisfaction. You are invited to write concerning any problem in automatic weight recording.

"On-the-Spot" Service

FOR EVERY STREETER-AMET WEIGHT RECORDER

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Automatic Weighers, Recorders, Scales and Services.

Founded 1888.

STREETER-AMET

How to Save Valuable Car-Hours

• In your vitally important business of transporting war materiel—the hours on the road are what count. Hours in the shop, as you well know, must be reduced to the minimum.

Glidden is helping to reduce shop maintenance time with a quick-drying freight car paint which can be applied two coats a day. This TWO-A-DAY paint dries quickly and in addition provides great durability, protection and all other essential properties of an ideal railroad maintenance paint.

TWO-A-DAY freight car paint is a typical development of Glidden Railroad Technical Service. Years of experience in solving railroad paint problems has given us a vast fund of practical "know-how" which we are glad to make available to all American railroads.

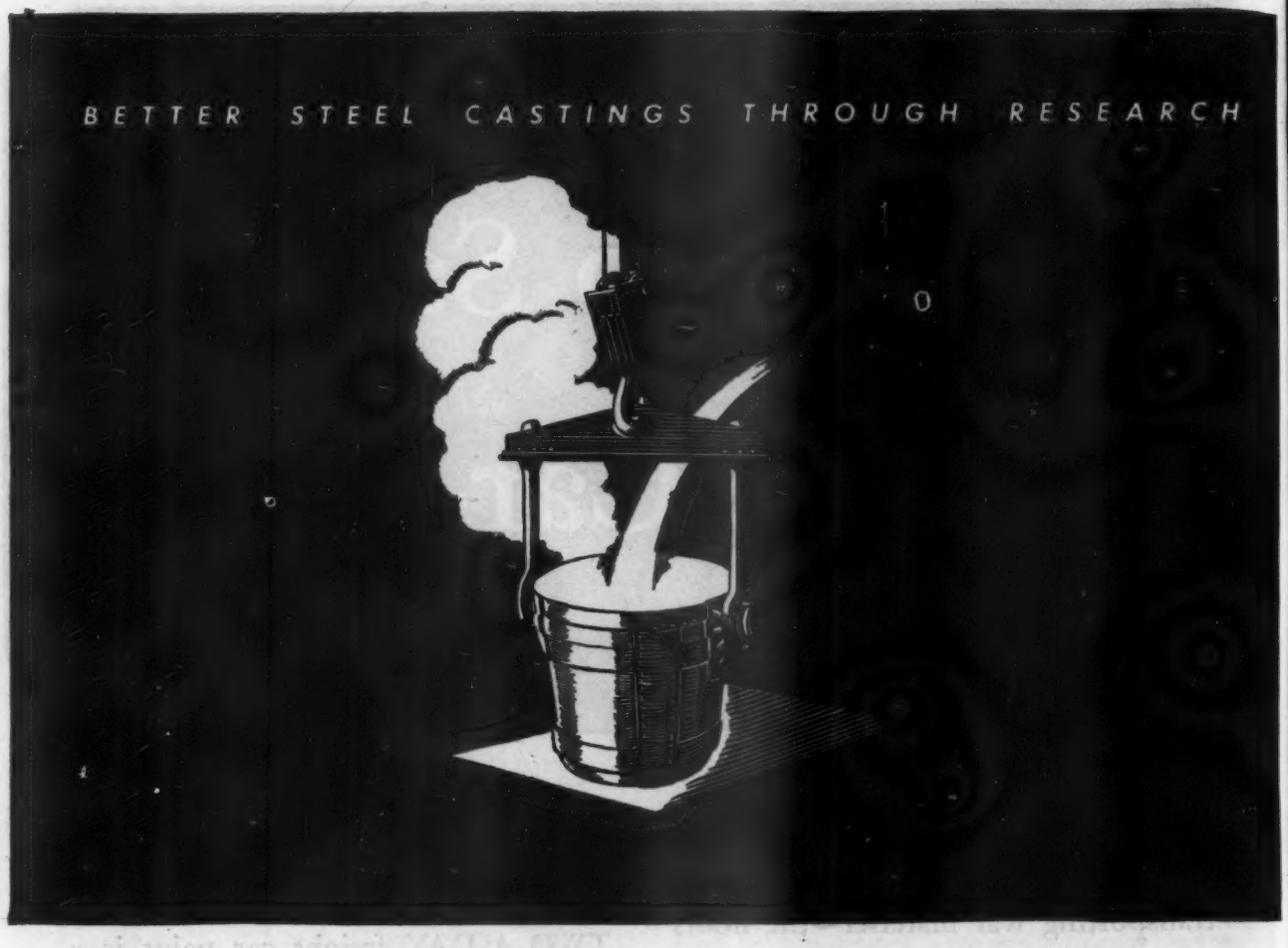
Eight Glidden plants and research laboratories, strategically located, are ready to serve you quickly. Just drop us a line.

TIME-TESTED

THE GLIDDEN COMPANY • Cleveland 2, Ohio

GLIDDEN *Pacemaker in Paints*

BETTER STEEL CASTINGS THROUGH RESEARCH



Substance and Flavor for the Stew

What comes out of the kettle depends upon what goes in. Good cooks know that. And so do today's good steel founders.

Research has outmoded "rule of thumb" methods. There is too much uncertainty in a "pinch of this and a pinch of that".

The exacting demands of industry—in both war and peace—have made a rigidly controlled science of preparing steel for castings.

Research has told us exactly what to add, and how much of it, to get hardness or toughness or elasticity or stamina. And how to enhance these desirable properties by heat treating.

We now have chemical controls and checks, regulated grain size and metal structure, mechanical properties that can be predetermined.

When certain alloying agents became subject to war scarcity, research again stepped in and developed new steels that were often better than the old ones.

As a result of the improved techniques and practices research has uncovered, our side has the finest weapons of war ever produced, and in the greatest plenty.

In this war production steel castings have had a very important share. Steel castings have saved both time and money, by adapting themselves to countless uses never dreamed of before.

So now, as an Industry, we are able to promise you that Steel Castings will be ready to perform a similar role in turning out improved tools and implements for living in peace.

Published by the Steel Founders' Society of America, to tell you about its organized Research Program.

MODERNIZE AND IMPROVE YOUR PRODUCT WITH

STEEL CASTINGS

Just in case you've eased up... ON YOUR PAY ROLL PLAN

Pause one brief moment. Compare your lot—and that of the men and women in your employ—with the lot of the infantrymen who meet the enemy face to face, who do the hardest fighting, who suffer the most casualties.

Let the full impact of war's unending grimness swiftly convert any tendency toward complacency into revitalized urgency. Remember—the war is not yet won.

As top management and labor, you've been entrusted with two major responsibilities—steadily maintained production, and steadily maintained War Bond Sales *through your Pay Roll Savings Plan.*

Decide *now* to revitalize your plant's Pay Roll Plan. Have your Bond Committee recheck all employee lists for percentages of participation and individual deductions. Have Team Captains personally contact each old *and new* employee. Raise all percentage figures wherever possible.

Don't underestimate the importance of this task. This marginal group represents *a potential sales increase of 25% to 30% on all Pay Roll Plans!*

Your success will be twofold: A new high in War Bond Sales; and a new high in production. Because a worker with a systematic savings plan has his mind on his work—not on post-war financial worries. He's taking care of the future now. His own. And his Country's future. *Help him!* REVITALIZE YOUR WAR BOND PAY ROLL SAVINGS PLAN.

Official U. S. Coast Guard Photo: The elevator to a Coast Guard-operated transport hospital

Back the Attack!

SELL MORE THAN BEFORE!

The Treasury Department acknowledges with appreciation the publication of this message by

RAILWAY AGE

This is an official U. S. Treasury advertisement—prepared under the auspices of Treasury Department and War Advertising Council.

THE M

that came to thousands of

a.c.f. American Car and F

MIRACLE

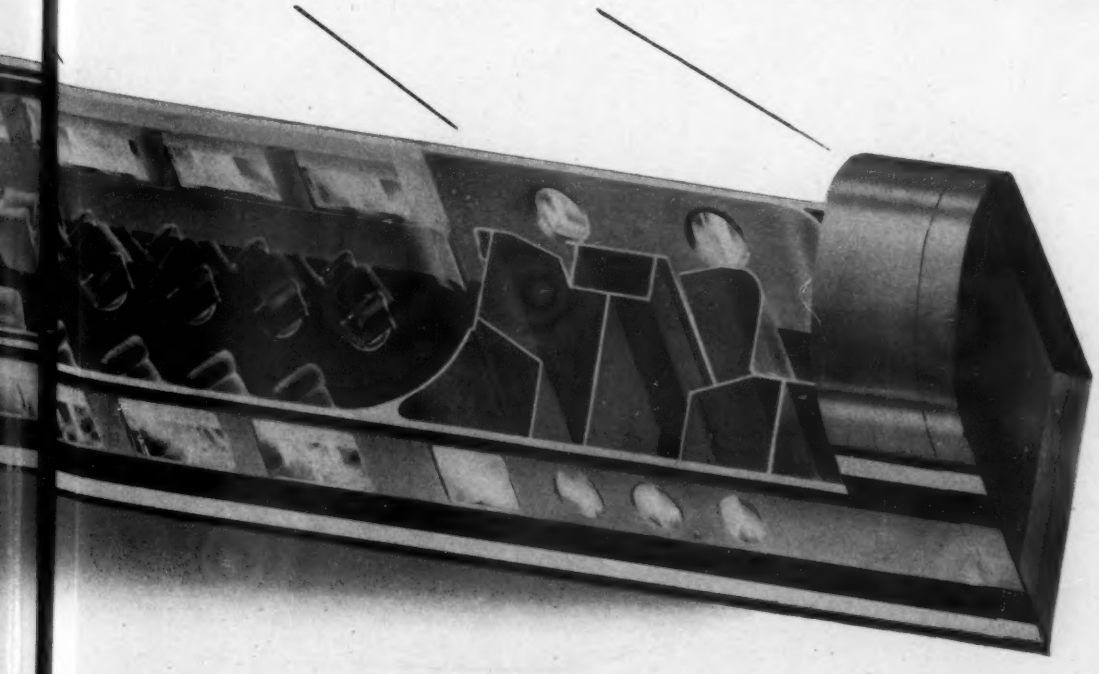
of "whistle stops"

When the early "iron horses" chugged and wheezed up a grade, hauling these red plush palace cars, the last word had been spoken in luxury. And for the eighties, they were *miracles in motion!*

Today our railroads are constantly providing new luxury, comfort and speed with safety. Witness the streamliner.

When Peace comes, the plans developed now by A.C.F. for super streamlined diners, lounge and coach cars — with glareless illumination, 100% automatic air-conditioning and a proverbial pin-dropping quiet — will provide a standard of luxurious travel to set the pace for all transport.

A.C.F. has pioneered and perfected thousands of rolling stock advances since 1875. This significant story of yesterday and tomorrow is yours for the asking.



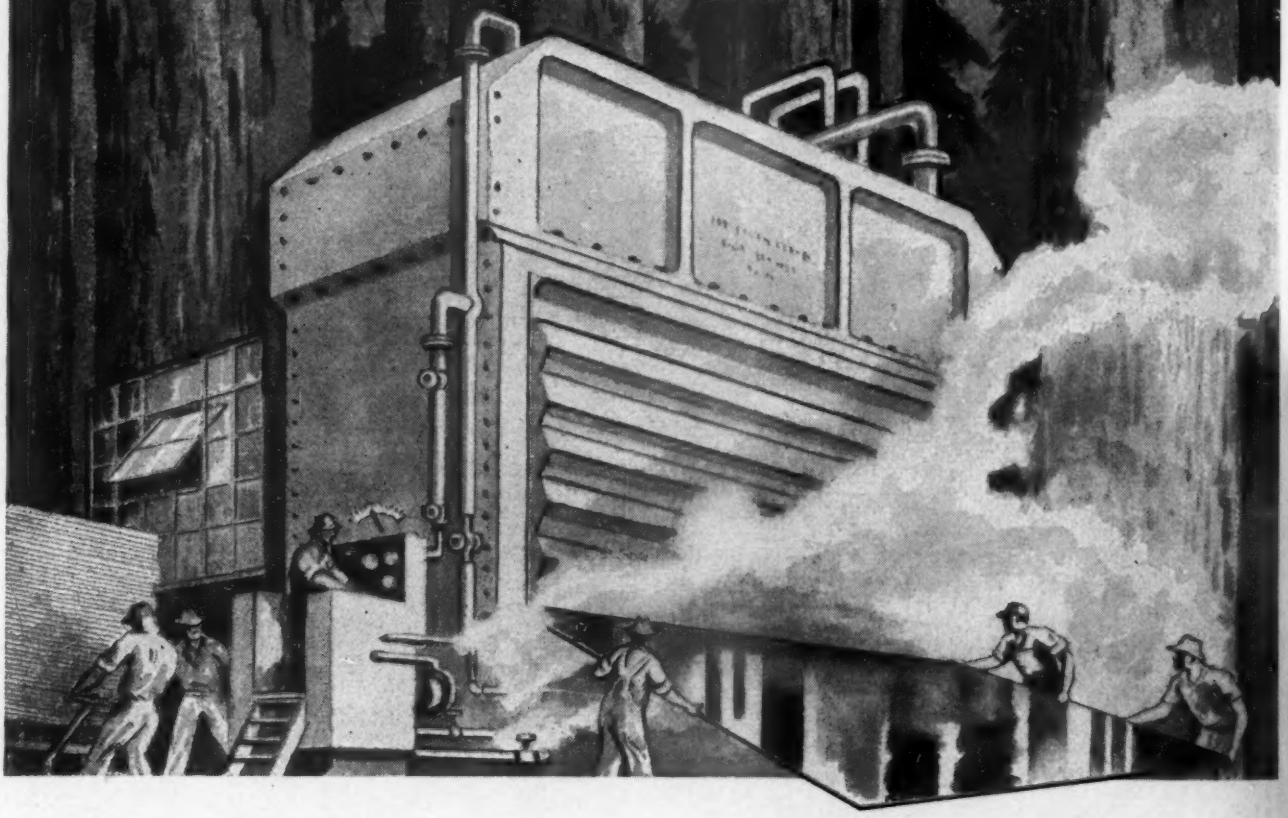
Foundry Company

NEW YORK · CHICAGO · ST. LOUIS · CLEVELAND · WASHINGTON
PHILADELPHIA · PITTSBURGH · ST. PAUL · SAN FRANCISCO

From the Douglas Fir Forests and the Plastics Industry comes a *NEW* tested material

INDERON

THE STABILIZED STRUCTURAL PRODUCT



What is INDERON?

INDERON is a new material, combining the advantages of two other proven materials —fir plywood and plastics. It is composed of three basic ingredients: strong, durable Douglas fir veneers, a plastic-impregnated fibrous film, and an internal adhesive of thermosetting resin. INDERON is neither a plywood nor a plastic. It is, in effect, an alloy which possesses the qualities of a true plastic at a cost comparable to finished plywood. It is manufactured in modern West Coast plywood plants, where Douglas fir veneers, phenolic adhesives and resin-impregnated paper are chemically united in high-heat, high-pressure presses.

What are the advantages of INDERON?

Because INDERON combines the best qualities of both plastic and plywood, it is available in larger sheets and can be produced cheaper than an ordinary plastic. Yet it is permanently insoluble and affords a marked resistance to chemical or mechanical destructive elements. In strength value it compares favorably with aluminum. It is dimensionally stable, inexpensive, easy to work, and requires no surface protection. In peacetime application it will be available in permanent colors, designs and patterns—all of which will be an integral part of the product itself!

How can you plan to use INDERON?

At present, INDERON is available only for Army-Navy uses. When it is no longer so urgently needed for war, INDERON will serve a wide range of uses in many industries. For example: INDERON is ideal for marine application. It will resist salt water, terrific strains, impact blows, abrasion, corrosive and toxic fumes. In the building field, INDERON will serve as roof, walls, floors and built-ins for tomorrow's homes. It will be applied to special packaging, to prefabrication, to furniture, to many another field.

Learn more about INDERON —Write NOW!

Buffelen Lumber & Mfg. Co.
Tacoma 1, Washington

Washington Veneer Co.
Olympia, Washington

manufacturers

Chicago Sales Office:
9 So. Clinton St., Chicago 6

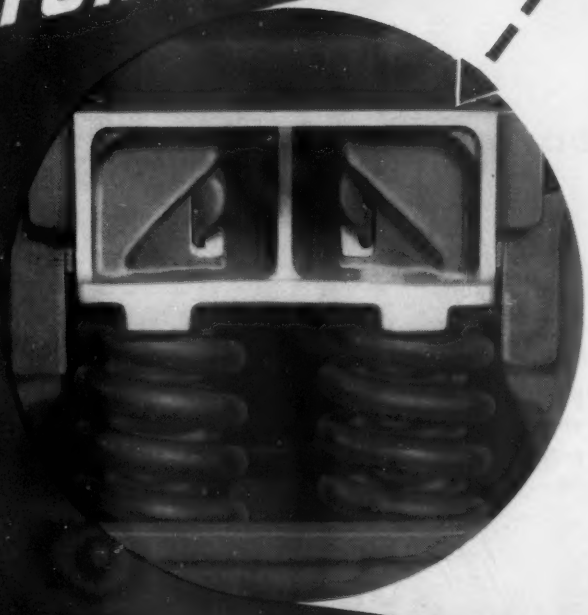
INDERON

THE Stabilized STRUCTURAL PRODUCT

THE TRUCK FOR TODAY'S NEED---TOMORROW'S SPEED!

NO SPRING PLATES
NO SPRING PLANKS

FOR TRAIN SPEEDS THAT Soar



Ride-Control COSTS NO MORE!

The A.S.F. Ride-Control Truck (A-3) makes possible material increases in freight-train speeds when used with long-travel, easy-riding coil springs. Thus, the cars under which it is used can carry more revenue tonnage in any given period. And increased speeds that provide faster overall schedules and service at lower unit cost are the measure of true operating economy.

Protection of lading and reduction of car maintenance and roadbed wear are additional factors that make this truck a sound choice from an operating economy standpoint.

While the Ride-Control Truck is safe for high-speed operation, it is in the price and weight range of conventional freight-car trucks.

AMERICAN STEEL FOUNDRIES

CHICAGO

TRADE-MARK OF THE CAST STEEL

will his eyes be on the job tomorrow?

YES—if he's wearing AO Safety Goggles!

AO Safety Goggles provide protection against eye hazards... remove the danger of lost-time eye injuries. The man working *unprotected* takes the risk. And it's usually a costly day for him—and for you—when an eye accident injures his sight.

How many of your workers are taking such risks? An AO Safety Engineer can point them out by making an eye hazard survey of your road. He'll also recommend the proper goggle for each type of job. Call in an AO man this week—and help keep eye accidents out of your system.

American Optical
COMPANY
SOUTHBRIDGE, MASSACHUSETTS

BOXPOK DRIVING WHEELS

Less Wear and Tear on Locomotive and Track

Boxpok Driving Wheel Centers prevent out of round wheels and flat spots. They permit more effective counterbalancing.

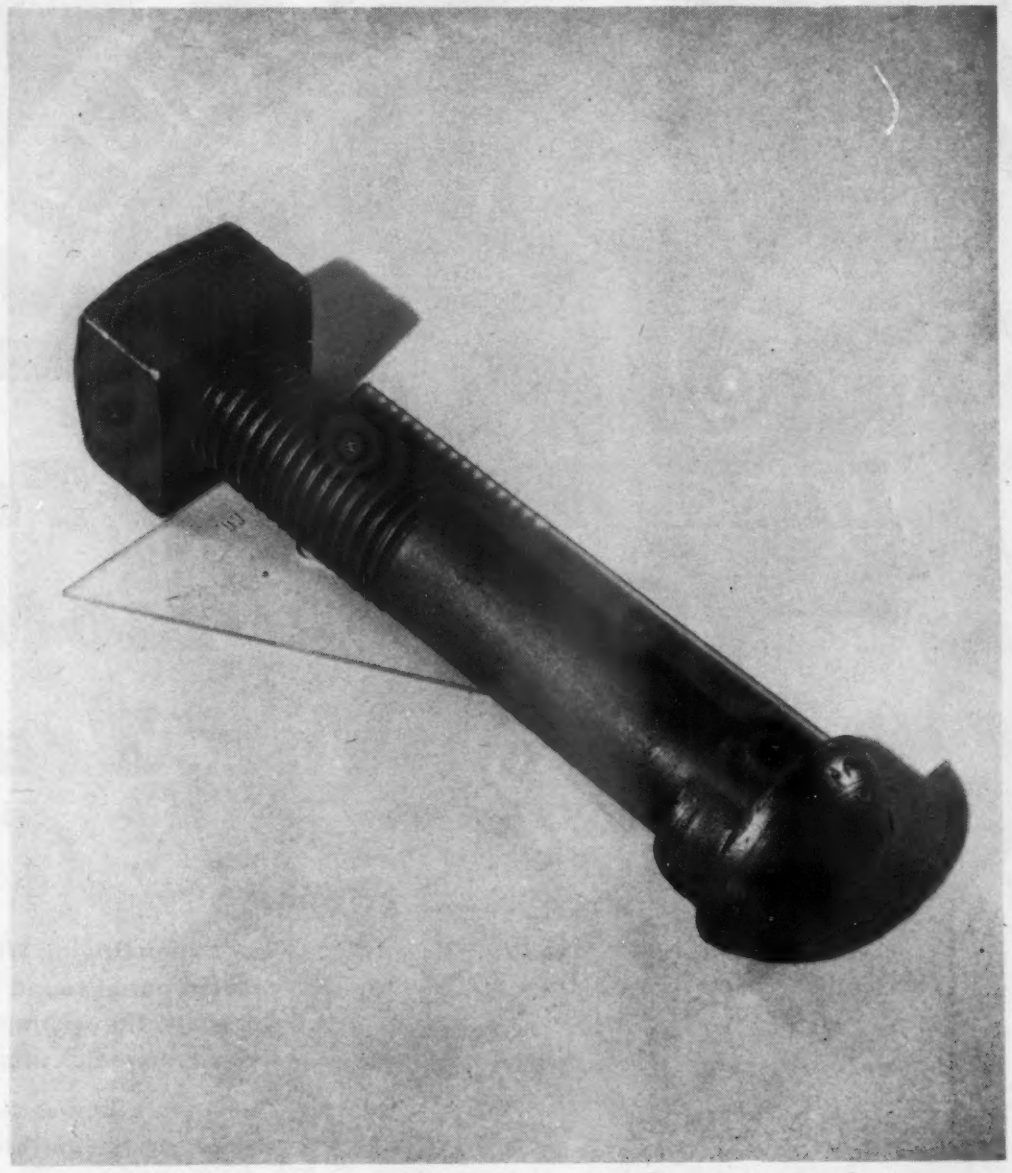
The unique box-section rim and spoke construction provides greater strength with less weight.

With BOXPOK Wheels locomotives stay in active service longer, tire mileage is increased, and maintenance expense is reduced.

Over the Years, Boxpok Wheels Have Proven Their Real Value on Hundreds of Locomotives in Service Throughout the World.

GENERAL STEEL CASTINGS

EDDYSTONE, PA. GRANITE CITY, ILL.



Portrait of C.F.&I. Bolt — Par Copley

SAFEGUARD THE TRAILS TO VICTORY...

By a new method of manufacture you are assured uniformity of the important thread feature for the *entire length of the threaded portion,* minimizing imperfect or non-uniform nut fit, accomplishing the bolt assembly desired in high standard track structure.

Physical properties of our track bolts are controlled automatically in every step of production, thus enabling CF&I to offer another dependable quality product.

The Colorado Fuel and Iron Corporation

GENERAL OFFICES: DENVER, COLO.

PATENT APPLIED FOR

Goodby, "Standing Room Only"

This Newly-Designed Postwar "Threedex" Coach Is The Answer To The Commuters' Prayer

No starry-eyed, visionary dream is this radical departure from the conventional suburban coach. It's real, it's practical—all its details expertly designed and engineered by Pullman-Standard. This newcomer among coach cars is air-conditioned and has a novel arrangement of upper and lower decks that *seats all passengers comfortably.* There are individual reading lights and space for stowing luggage out of the way. Gone will be jostling, standing in the aisles, in this car of the future—truly the answer to the commuters' prayer!

As yet this most modern postwar car is only on paper and you can't ride on a blueprint, to be sure. But it illustrates the advanced thinking Pullman-Standard is devoting to the railroads' postwar equipment. It is planning many more new types of cars to give passengers more for their money when the materials are available.

Just as Pullman-Standard's production today is devoted entirely to matériel to help our fighting men win speedy victory, so will our postwar planning and research program do much to help establish gainful employment in the peace to come.

THE GAME SECTION. Four comfortable, semi-private sections are provided for cards and other games. In these quiet and pleasingly decorated nooks passengers find opportunities for social contacts which make familiar journeys enjoyable, daily experiences.

ADDITIONAL TOILET FACILITIES. The individual washrooms in this newly-designed "Threedex" coach are models of careful and fastidious planning. Smartly appointed, they are equipped with the most modern restroom fixtures and lighting facilities.

Diagram Showing Seating Arrangements

Use it up—make it do—
Wear it out—do without
and
BUY MORE WAR BONDS!

Pullman-Standard
CAR MANUFACTURING COMPANY
CHICAGO • ILLINOIS
World's largest builders of modern streamlined railroad cars
Offices in seven cities . . . Manufacturing plants in six cities

© 1944—P. S. C. M. Co.

The Reason Why . . .

. . . BARBER STABILIZED TRUCKS are being used so extensively is because they have proved their value in service. In today's extremely heavy and fast freight movements Barber Stabilized Trucks are saving equipment and reducing damage to lading by making cars ride easier at any speed—a service to both the shippers and the railroads.

Barber Stabilized Trucks have been selected for over 50 per cent of all freight cars purchased in the United States and Canada since January 1st, 1944.

Specify Barber Stabilized Parts for Trucks on New and Rebuilt Cars

STANDARD CAR TRUCK COMPANY

332 SOUTH MICHIGAN AVE. CHICAGO 4, ILLINOIS

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 117 August 19, 1944 No. 8

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Power switch machines, and the use of signals rather than time-tables to authorize train movements, increases track capacity and saves train time between Moncton, N. B., and Halifax, N. S., on a line handling large quantities of war traffic.

Army-Navy Forwarding Operation Speeds L. C. L. War Freight 304

Describes service inaugurated two years ago which has expedited shipments, reduced costs, and conserved railroad equipment.

The Railways and the Colleges 306

R. E. Dougherty, vice-president, New York Central, who believes one of the greatest opportunities for engineers "lies in the field of economics, which is allied to operation," herein states probable openings for the graduate with technical training in post-war days, listing qualities looked for in hiring new men, educational needs, etc.

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★

PRINTED IN U. S. A.

"UNION" SWITCH STANDS

are expertly designed for mainline service!

GOOD railroad practice requires the use of a sturdy, safe, efficient and easily operated switch stand on main track switches.

The rugged construction, the flexibility of application and the degree of inherent safety of the "Union" hand-operated Switch Stand are obtained by using design features resulting from years of experience with power-operated switch machines. Incorporated in a single mechanism are facilities for operating the switch, elements for locking a standard lock rod when the points are normally positioned and a circuit controller, for signal control, which checks that the switch points are actually locked. Point detection is also provided in the same mechanism to secure additional safety for facing-point train movements.

The "Union" T-20 and T-21 hand-operated Switch Stands are identical except that the T-21 has a built-in target drive mechanism. Their design permits convenient and effective application of electric locks and practically all of their parts are interchangeable. See Bulletin No. 156.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

3147

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

RECKLESS DEMAGOGUERY: The recent reworking by Assistant Attorney General Berge of Vice-President Wallace's 1943 attacks on the railroads is appraised by this issue's leading editorial as a New Deal effort to assure the rejected Wallace's following of economic illiterates that the party is still eager for their votes. The editorial discusses and answers in turn the allegations of the indictment which Berge drew without benefit of grand jury to charge the railroads with five sins of commission and one of intention. At the same time it is pointed out that Berge, as Wallace before him, could afford to risk their reckless demagoguery because the railroads have not yet done an adequate job in educating the public on even the bare essentials of a public policy regarding transportation which will give all carriers equal opportunity to maintain and improve their service.

●

REJOINDERS: Meanwhile, the Berge blast and the follow-through by Attorney General Biddle have brought sharp rejoinders from the railroads and shippers. The prompt reply of Chairman Johnston of the Western Association of Railway Executives, reported in last week's issue, has been followed by the Kansas City speech wherein the Association's general counsel, Joseph H. Hays, warned that the threatened anti-trust prosecutions of the carriers would bring chaos and ruin to industry. G. H. Shafer, president of the National Association of Shippers' Advisory Boards, came forward with a prediction that the attorney general will get little or no encouragement from the shippers, who have implicit confidence in the I. C. C. And the Allied Florists' Association of Illinois showed how it felt when it made the Biddle attack an occasion for the presentation to Ralph Budd of a large bouquet in recognition of his service as defense transportation commissioner and of the wartime achievements of the railroad industry.

●

TRUCKERS TAKEN OVER: The O. D. T., acting under an Executive Order issued by President Roosevelt, took nominal possession of 103 midwestern trucking companies at 12:01 a. m. August 12. The action followed a "labor disturbance" which resulted from the failure of the truckers to comply with a War Labor Board directive awarding a wage increase of seven cents an hour to their employees. With operating ratios pushing up to 100, the operators had pleaded inability to pay; but O. D. T. put the wage hike into effect on a current basis, leaving the back-pay to come out of future earnings.

●

THOMPSON QUITS I. W. C.: Chester C. Thompson has resigned as chairman of the advisory board and president of the government-owned Inland Waterways Corporation to become president of American Waterway Operators, Inc. He has headed I. W. C. since November, 1939, when he succeeded the late Major General T. Q. Ashburn, whose 15-year reign was ended by Colonel J. Monroe Johnson, then assistant secretary of commerce, shortly after the Corporation was transferred from the War Department to the Department of Commerce. I. W. C. Vice-President John S. Powell is acting chairman and president, pending appointment of a permanent successor to Mr. Thompson.

●

GRAIN-CAR SHORTAGE?: Senator Langer of North Dakota has been hearing from home about grain-car shortages in the Northwest. And he wants the matter investigated by the same Senate interstate commerce subcommittee which looked into the grain-car situation last year and "got results." His call for the probe is made in Senate Resolution 321, introduced this week.

●

RAILWAYS AND COLLEGES: R. E. Doughtery, vice-president of the New York Central has looked over the opportunities which post-war railroading may offer to college graduates — especially those with technical training. He sets forth his realistic but optimistic findings in one of this issue's feature articles. He thinks there will be opportunities for sound cooperation between colleges and the railroads, provided too many educational institutions do not seek to participate, thus creating "wasteful, inefficient, competition in education." And he warns the college graduate that he must not expect privileged status in such matters as guarantees against lay-offs and other vicissitudes of the business; the college man must take his chances with the rest of the organization.

●

PULLMAN NEGOTIATES: Pullman is opening negotiations for the sale of its sleeping-car business to the railroads. Under the terms of the recent court decree giving it the choice, it has decided to retain its car-building business. At the same time it would have preserved, if possible, the pool system of sleeping-car service which the court found in effect to be desirable in the public interest and to the economic advantage of the railroads. Thus the proposal to arrange for the take-over by a railroad group, which, as Pullman President Crawford puts it, would be able to continue the operation "under the management of a going, experienced organization that could be taken over with the physical properties."

●

WILLIAMSON TO RETIRE: Acting upon the advice of his physicians, Frederick E. Williamson has resigned from the New York Central presidency which he has held for 13 years. The resignation becomes effective on September 1, and the new N. Y. C. president will be Gustav Metzman, the system's Chicago vice-president. The N. Y. C. board accepted Mr. Williamson's resignation with "great reluctance and deep regret," paying tribute to his leadership throughout the years of depression and in the present war period. His railroad career, extending back to 1898, includes a three-year term as president of the Burlington; and a brief tour of Army duty early this year as one of the seven colonels commissioned to serve as regional directors during the period of War Department operation.

YANKEE SHREWDNESS?: The business leadership of New England, as represented by the New England Council, appears well pleased at the prospects for federal expenditures on the "matching" basis for post-war airport and highway facilities in that section. Yet out of a hypothetical appropriation of $90 million for air transport facilities, New England would receive about $4.7 million—5.2 per cent of the national total while New Englanders pay 8 per cent of total federal income taxes. In other words, in order to enjoy a federal gift of $4.7 millions, New Englanders, as federal taxpayers, would first have to contribute $7.2 million. Likewise, in the case of federal-aid highways, New England can look forward to the prospect of paying $40 million in income taxes in order to get back 65 cents on the dollar for highway development. "Yankee Shrewdness—1944 Model" is what one of this issue's editorials calls it.

●

C. T. C. ON C. N. R.: Track capacity has been increased and train delays reduced by the centralized traffic control system which has been installed on the Canadian National's 185-mile line between Catamount, N. B., and Windsor Junction, N. S. The line includes the 124.7-mile operating district between Moncton and Truro where the before-and-after picture for a comparable month shows that the speed of through freights was up from 13.84 m. p. h. to 18.06 m. p. h., despite the fact that 115 more trains were operated. Gross ton-miles for the district increased 14.67 per cent. Savings in train time are attributed in part to the power switch machines and in part to the use of signals rather than timetables and train orders. The installation is described in the article beginning on page 297.

●

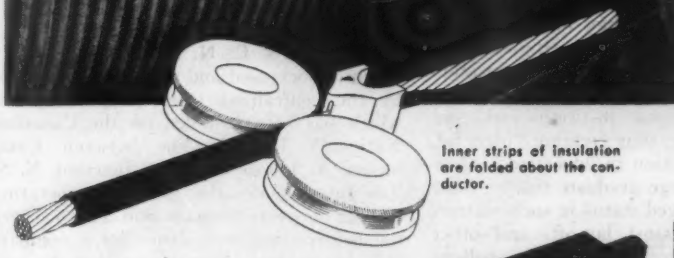
BOOSTER KEEPS IN STEP: Development of the booster has kept pace with the changes in locomotive design which have met the requirements of improved train performances of recent years. Especially adapted to the new operating conditions is the Franklin Railway Supply Company's Type E booster, the design of which has followed the trend toward higher steam pressures in modern engines. The booster has been given exhaustive dynamometer tests covering all features of operation under conditions simulating as nearly as possible the actual locomotive application. Results of the tests are shown in the illustrated feature article beginning on page 309.

●

HANDLING ARMY L. C. L.: Freight forwarding operations inaugurated two years ago by the Army Transportation Corps' Traffic Control Division have greatly expedited the railroad journeys of war materials moving in l. c. l. quantities, while at the same time reducing government shipping costs and conserving railroad equipment. One of this issue's illustrated feature articles describes the operation, which has also handled the Navy's l. c. l. business. An outstanding record has been made on the utilization of refrigerator cars which would otherwise return empty to California and Utah.

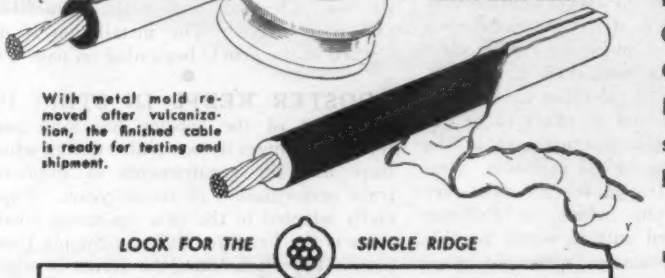
BUNA S RUBBER and the OKONITE STRIP INSULATING PROCESS*

Vulcanizing in a Continuous Metal Mold is an Essential Part of The Okonite Strip Process.



Inner strips of insulation are folded about the conductor.

Pure tin backing on the final layer forms a continuous metal mold.



With metal mold removed after vulcanization, the finished cable is ready for testing and shipment.

LOOK FOR THE SINGLE RIDGE

* THE OKONITE STRIP PROCESS

The Okonite Strip Insulating Process is a unique and superior method of applying rubber insulation to a conductor.

Strips, cut from uniformly calendered sheets, are passed through "covering wheels". These strips are formed or folded lengthwise about the conductor and thus insure perfect centering.

One continuous operation is used to apply at least two or more layers as required, the outermost layer being a strip with tin backing.

The insulated conductor is thus temporarily encased in a continuous tin mold. It is wound around a drum of large diameter, ready for vulcanization. The metal mold provides uniform heat distribution throughout the length.

After the cable has cooled, following vulcanization, the tin backing is peeled off as the finished wire is unwound from one reel and wound on another.

3772

BECAUSE of the rubber shortage, *all* manufacturers have been forbidden by the government to use natural rubber in wires and cables for commercial use.

In 1942 it became apparent that Buna S would be the principal synthetic rubber to be used for insulation. Using Buna S synthetic rubber is not a new process for The Okonite Company. In 1939, before hostilities began, the Okonite Research Department had imported Buna S from Europe and soon found out how to use it in place of the small amount of natural rubber used in Okolite, an oil base insulation.

Extensive proving-ground tests have shown that Okolite made with Buna S possesses the same electrical and mechanical characteristics as when made with natural rubber. In addition, Okolite made with Buna S is applied to the conductor by the familiar Okonite Strip Insulating Process*.

While the industry, as a whole, is using Buna S rubber extensively, *only* Okonite uses the complete Strip Process to apply it. The Okonite Company, Passaic, New Jersey.

ARMY NAVY

OKONITE

OKONITE SINCE 1878

INSULATED WIRES AND CABLES

Another New Deal Blast Against the Railways

The speech of Assistant Attorney General Wendell Berge at Kansas City on August 7 attacking the railroads is so closely repetitive of Henry Wallace's onslaught on them at Dallas last October (see *Railway Age*, October 23, 1943, page 657) that the connection between them is obvious. Wallace's New Deal assignment apparently was to line up the vote of the economic illiterates who are the political heirs of the populists. Wallace having been given the gate by the Democratic party, Berge must have been directed to deliver the vice-president's Dallas speech over again to demonstrate to the Wallace following that the party is still eager for their votes.

Berge charged the railroads with five sins of commission and one of intention. One charge was the oft-repeated allegation of "discriminatory freight rates" against the West and South. The whole question of interterritorial freight rates is now under investigation by the Interstate Commerce Commission, the tribunal established by law to deal with such matters. If Mr. Berge is dissatisfied with the Commission, he might perhaps better talk to President Roosevelt than the public, because all of the members of that tribunal are appointees of Mr. Roosevelt.

Efficiency FOR VICTORY

His second charge was that railroad rates are "fixed by private conspiracies and not by public authority." The essential falsity of this charge is shown by the fact that the Commission can prevent any rate from going into effect, whether proposed by an individual railway or a group of railways. The late Joseph B. Eastman had as great zeal for the public welfare as any public servant the nation ever had; and unlike Mr. Berge, he had knowledge and experience of how to protect that welfare in transportation. Of the criticism of the system by which freight rates are initiated, Mr. Eastman on June 15 last year said it had its source "not in the shippers of the country, but in the lawyers and economists of the Department of Justice." He added that he had "no doubt whatever" that the method of originating rates which Berge designates as a conspiracy serves "a useful purpose" and is "desirable in the public interest."

Berge's charges (3) and (5) were to the effect that motor, waterway, and air carriers have been "placed at a disadvantage" and "retarded." Practically all the investment excepting in vehicles and vessels used in providing these other types of transportation has been made from public funds in a sum aggregating more than the total investment in railroads. Operators of vehicles and vessels using this publicly-owned plant pay fees for its use which vary from zero for the waterways to nominal (i.e., not fully compensatory), in the case of highways and airways. Since the railroads not only have to supply similar plant for themselves from their own resources, but also have to pay taxes on the ownership of such plant, while competing plant in public ownership is tax free, one may wonder under what possible "disadvantage" air, highway, or waterway transportation may suffer comparable to that under which the railroads are laboring.

Mr. Berge's fourth charge was that a "monopolistic condition" within the railroad industry has delayed the introduction of technological improvements. It is possible, by careful selection of instances (and if one's audience does not ask embarrassing questions to bring out all the facts) to make a deceptively plausible *prima facie* case for this charge. In any industry or activity there are always those who seek to persuade competitors not to introduce innovations. The proof

of the charge, however, must lie, not in instances of efforts to retard innovation, but in evidence that such efforts have succeeded in significant measure. Mr. Berge cannot produce such evidence. It does not exist.

The sin of intention which Mr. Berge lays against the railroads is that they are planning to monopolize all forms of transportation under a scheme of "integration." All the railroads have asked for (see *Railway Age*, September 18, 1943, page 466) is an "equal opportunity" with others to enter "the air field, the truck field, the bus field, and the field of waterways"—of course, under such regulation to forestall monopoly as already exists in those fields. To contend that the railroads seek to monopolize an entire area of the economy merely because they seek permission to enter into competition in it is about as rational as to say that, because a man asks for a glass of beer, he desires to become shooting drunk. Every reputable economist who has written on transportation during the past decade has recommended that the railroads be given permission they seek to supplement their rail service by engaging in other forms of transportation. The Chamber of Commerce of the United States in a recent poll of its member associations voted overwhelmingly in favor of giving the railroads this right—despite the objections of operators of the other types of transportation, who prefer to have the railways prevented from increasing competition with them. How can desire of the railways to *increase* competition in transportation be construed as a desire to monopolize it?

The provision of other types of transportation by the railroads is a convenience which is being called for by users of transportation who demand a "department store" type of service to supplement the "specialty shop" condition which now prevails in the transportation market. With alert regulatory commissions actively on the job to prevent monopolization, it is not possible to ascribe anything but demagogy to one who makes the charge that Mr. Berge has made, echoing Henry Wallace.

The fact that Berge, as Wallace before him, can afford to risk such reckless demagoguery shows the railroads have not yet done an adequate job in educating the public on even the bare essentials of a public policy regarding transportation which will give all carriers equal opportunity to maintain and improve their service.

Yankee Shrewdness--1944 Model

The business leadership of New England appears to be well pleased at the prospects and proposed means for post-war expansion of air and highway transportation in that area, to judge from the July issue of the "News Letter" of the New England Council. One article in that publication sets forth, with evident editorial approval, the program of Civil Aeronautics Administrator C. I. Stanton whereby airports would be expanded by the force-feeding process of "federal aid." Under this program, local governmental units would be tempted into airport expenditures to "match" gifts for this purpose from the federal treasury.

Out of an hypothetical appropriation of $90 million for such federal aid, according to Administrator Stanton's plan, New England would receive about $4.7 million, or approximately 5.2 per cent of the national total. But New Englanders *pay* about 8 per cent of total federal income taxes. In other words, in order to enjoy a federal gift of $4.7 million, New Englanders as taxpayers to the national treasury would first have to contribute $7.2 million. If this is the kind of business which commends itself to present-day Yankee acumen, then that quality has suffered a transformation from its early-day manifestation. In those times (which, incidentally, were relatively more prosperous for New England than recent ones have been) it may be doubted that the Yankee trader would have shown much enthusiasm for a transaction which promised to return him only 65 cents on the dollar of his principal.

New England did not achieve its initial primacy in industry and wealth by waiting for the federal government to finance public works in the area. Instead, its thrifty and resourceful citizens busied themselves with invention and with cautious investment of their savings—not then so largely syphoned off by the insatiable demands of a federal government being pushed by pressure groups into invasion of the economy. In the days of original railroad development, New Englanders not only financed their own railroads, but invested huge sums produced by their enterprise and thrift in railway development in other parts of the country.

The same issue of the "News Letter" from which we derive information of the method of financing air transportation development which seems to suit the present-day Yankee, also includes a report on proposed post-war highway expenditures. Here New England is looking to the beneficence of the federal government for a gift of $25 million out of a total federal appropriation of $500 million. New England, that is,—seemingly without protest from her industrial and business leadership—looks forward to the prospect of paying $40 million in income taxes in order to get back 65 cents on the dollar for highway development in the region.

The "News Letter" expresses no concern regarding the future adequacy of New England's railroads, which have to rely on private investment for their improvement and development. Yet no section of the country is more dependent than New England upon *nation-wide transportation service*, such as only the railroads can give. Costs (and rates) of air and highway transportation are closely proportionate to length of haul, but, with railroad costs and rates, the progression diminishes as distance increases. Much of New England's traffic, inbound and outbound, moves on "group" and "blanket" rates which serve greatly to offset the competitive disadvantage of the area as a whole, and especially its more remote points, because of distance both from their markets and from raw materials. As traffic is artificially diverted from the railroads, by the bait of large "investments" of public funds in plant for types of transportation with costs closely proportional to distance, the region will more and more

feel the handicap of its location—which the railroads have been able greatly to mitigate.

New England is not the only section of the country which—by trusting to Washington coercion rather than to the voluntary thrift and enterprise of private citizens for its transportation development—is getting back only a fraction of what it thereby must pay out in added federal taxes. It is not the only region which—in its policy toward transportation—is dropping two birds in hand to pursue one in the bush—and not an especially nourishing fowl either, for all its fine plumage.

Manila Rope—A Casualty

Although American science and research have developed remarkable substitutes for several critical materials, including rubber and hog bristles, Manila rope is one of the few materials, manufactured directly from natural products, for which no comparable substitute has been found. Other fiber ropes now on the market lack many of the desirable qualities of Manila, and their tensile strengths are considerably less, ranging from probably 75 per cent to 80 per cent of the strength of Manila rope.

Manila fiber is obtained from the leaf stalks of the abaca tree which belongs to the banana family and grows principally in the province of Davao on Mindanao, the great island at the tip of the Philippine archipelago. Small quantities also grow in Sumatra and in the Canal Zone, but the plant requires large quantities of moisture evenly distributed throughout the year and for this reason it flourishes in the Philippine groves. Manila is the strongest of vegetable fibers and is recognized throughout the world as the supreme fiber for rope and cordage. Individual fibers vary from four to eight feet in length, they are lightweight, soft, lustrous and do not stiffen when wet. They are slow to absorb water and dry quickly, thus preventing rot that usually destroys other fibers. The abaca tree grows to a height of 20 to 30 feet, with huge leaves characteristic of the banana, and develops flowers in three years, after which it is cut down for its fiber.

The restoration of the abaca industry will be one of the first and most important undertakings facing the American forces when they drive the Nipponese from the Philippines. The problem will be complicated further by the fact that even prior to the war the production of Manila fiber was almost exclusively in the hands of the Japanese, with more than 23,000 Japanese living in the abaca growing districts. After the war it will be necessary to revamp the entire Manila fiber industry and to recruit native Filipinos for both management and labor.

More than 90 per cent of the world's supply of Manila fiber was produced in the Philippines prior to the war, and about one third of the annual production, valued at approximately $7,000,000, came to this country, while shipments to Great Britain were only slightly less. The first samples of Manila fiber were brought to the United States by a lieutenant of the U. S. Navy in 1820, who demonstrated it in Salem, Mass. As a development of this episode, Manila rope became almost indispensable to New England fishermen and the Navy and throughout American industry itself.

The abaca industry was largely in American hands during the period that Gen. Leonard Wood served as governor of the Department of Mindanao-Sulu, and the general encouraged discharged soldiers to establish abaca plantations. In the period between 1916 and 1941 practically all American and Filipino owned plantations passed to the control of Japanese interests, frequently by devious methods and legal dodges, since the Philippine constitution forbids the sale or lease of public lands to persons other than those of Filipino or U. S. citizenship. And, although the seriousness of the situation caused considerable concern before the war, no adequate solution was reached.

Train Communication to Be Used Extensively

After twenty years of research and experiment, train communication has apparently reached a state of development which will make it an accepted railroad facility. During those twenty years, various types of communication were used in scheduled train operation, but because of technical difficulties or imperfections, or because the railroads were of the opinion train communication systems could not meet all requirements in their partially developed state, they were not widely adopted.

Now the Pennsylvania has announced that two main-line, four track divisions, covering 245 miles of line between Harrisburg, Pa., and Pittsburgh, Pa., will be equipped with train-to-train and train-to-tower telephone communication. A total of 300 locomotives, 90 freight train cabin cars and six wayside towers will be equipped, the necessary refinements having been brought about through the pooling of the research and engineering resources of the General Electric Company and the Union Switch & Signal Co.

The installation will multiply by several times all the train communication equipment now in service and will apply it to one of the busiest sections of railroad in the world.

On September 13, 1944, the Federal Communications Commission will hold a hearing for the purpose of investigating the establishment and use of train communications systems in railroad operation. It is expected that the information developed at this hearing will assist and guide the railroads in carrying out their further development of train communication. The announcement states that "the Commission does not contemplate any immediate determination of policy, but

expects to keep the matter open for a period sufficient to enable all persons to complete all reasonable experimentation and to acquire all necessary data. Further hearings will be held from time to time as the need therefor may appear."

Several railroads now have train communication systems in regular service and ten or more are making intensive studies. A number of communications engineers have been appointed to make these studies and a fund of highly valuable information should be available by September 13. Among other things, the investigation looks forward to the desirability of the assigning of radio bands to railroads for train communications systems, but a more immediate requirement is to show the value of communication as a means of improving train operation and promoting safety. Although the Pennsylvania's is an inductive rather than a radio system, the road's decision to proceed with such an extensive installation is convincing evidence that experiments by that railroad have been successful and that operators on at least one railroad are assured of the value of train communication.

The Economic Causes of War

Illustrative of the lack of statesmanship in this country and the world is the extent to which politicians, business leaders and labor leaders ignore the fact that modern wars are primarily and principally due to *economic* causes.

Most of their proposals for establishing and maintaining peace contemplate the creation of international organizations backed by the armed force of the "peace-loving" nations. These are proposals for preventing wars without removing their causes. Why did Italy attack Ethiopia, Japan attack China and seize widespread territories belonging to other nations, and Germany seize most of Europe and attack Russia? They called themselves the "have-not" nations, and contended that, to improve the economic conditions of their peoples, they had to grab widespread territories which, as they claimed, had been forcibly and unfairly pre-empted by the "have" nations. And it was true that other nations—especially European—had possessed themselves of large parts of the earth.

But the real cause of trouble was that these and most other nations (including the United States) for their own supposed advantage, set up tariff barriers around the territories they controlled or adopted other policies that hindered international trade. The railways of the United States have as much, or even more, reason to be concerned regarding such policies as any of our industries. So-called "protective" tariffs, insofar as they affect domestic wages and prices, increase the wages and prices the railways have to pay without giving them any compensating benefit; and the railways are injured along with other industries by policies which, by restricting foreign trade, tend to cause wars.

If the people of any country are not hindered by their own or other governments in selling and buying raw materials and (or) semi-finished and finished products in any part of the world they please, the people of that country can prosper just as much if they control only a small territory as if they controlled half the earth. But more and more nations have become obsessed with the belief that, by tariffs and other restrictions on foreign trade, they can curtail their imports without curtailing their exports, maintain higher wages and prices than prevail in other countries, and thus enhance their prosperity. The "aggressor" nations, their foreign trade restricted by these policies, grab for more and more territory in order to increase their people's prosperity by enlarging the areas within which they can trade and to make themselves self-sufficient in case of war.

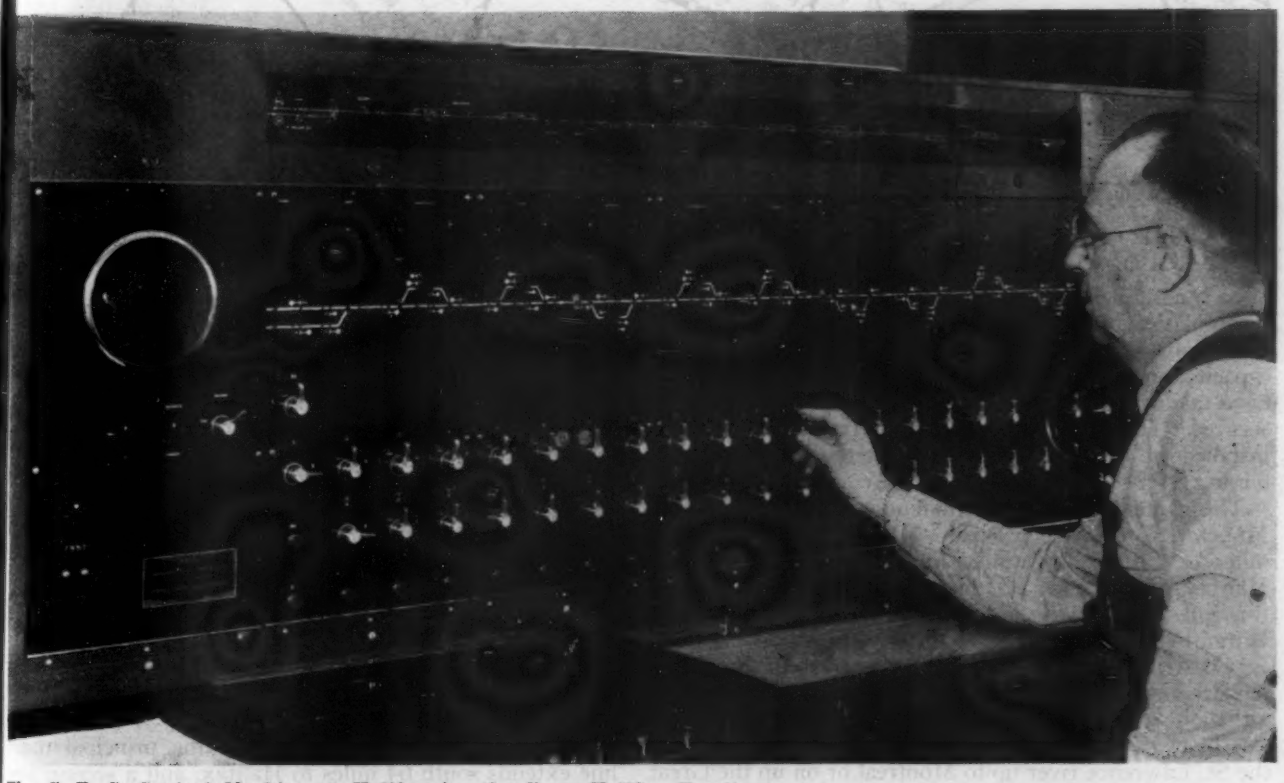
No world organizations that do not destroy such economic causes of wars can long prevent wars. And yet most of those in this country who most loudly advocate international organizations to maintain peace, by force if necessary, at the same time favor policies tending to perpetuate the true causes of wars—i.e., the economic causes. Most of our labor leaders and other New Dealers favor maintenance or even increase of the wages fixed during the war, which would leave this country in the post-war period with much the highest wages in its history. Maintenance of these high wages, by necessitating high prices and transportation rates here, would both hinder exports from the United States and invite increased imports to this country from countries able, because of lower wages, to make lower prices. Large imports into the United States, without corresponding exports from it, would curtail production and employment in this country—perhaps drastically. What would we do then? Reduce wages and prices? Or raise our protective tariffs further—and thereby restrict foreign trade and contribute to the economic causes of war, as we actually did under both Republican and New Deal administrations between World War I and World War II?

Under the Hoover administration we raised our tariffs, thus causing other nations to raise theirs, which made the world-wide depression worse. And in 1933 President Roosevelt caused adoption of policies of raising our wages and prices by N. R. A. and destroyed the International Economic Conference at London, with the result of prolonging the depression throughout the world, and especially in the United States. Very few persons realize the extent to which, by such policies, the United States contributed to the causes of World War II.

A sound international economic foundation is the greatest essential of an enduring peace; and economic policies in each country that will promote foreign trade are essential to a sound international economic foundation. World organizations that are not based on such an economic foundation will not long be able to maintain peace, regardless of how much armed force they may be empowered to use for that purpose.

Canadian National Installs C. T. C. on 185 Miles of Line

Project between Moncton, N. B., and Halifax, N. S., increases the track capacity and saves train time on line which handles large volumes of war traffic

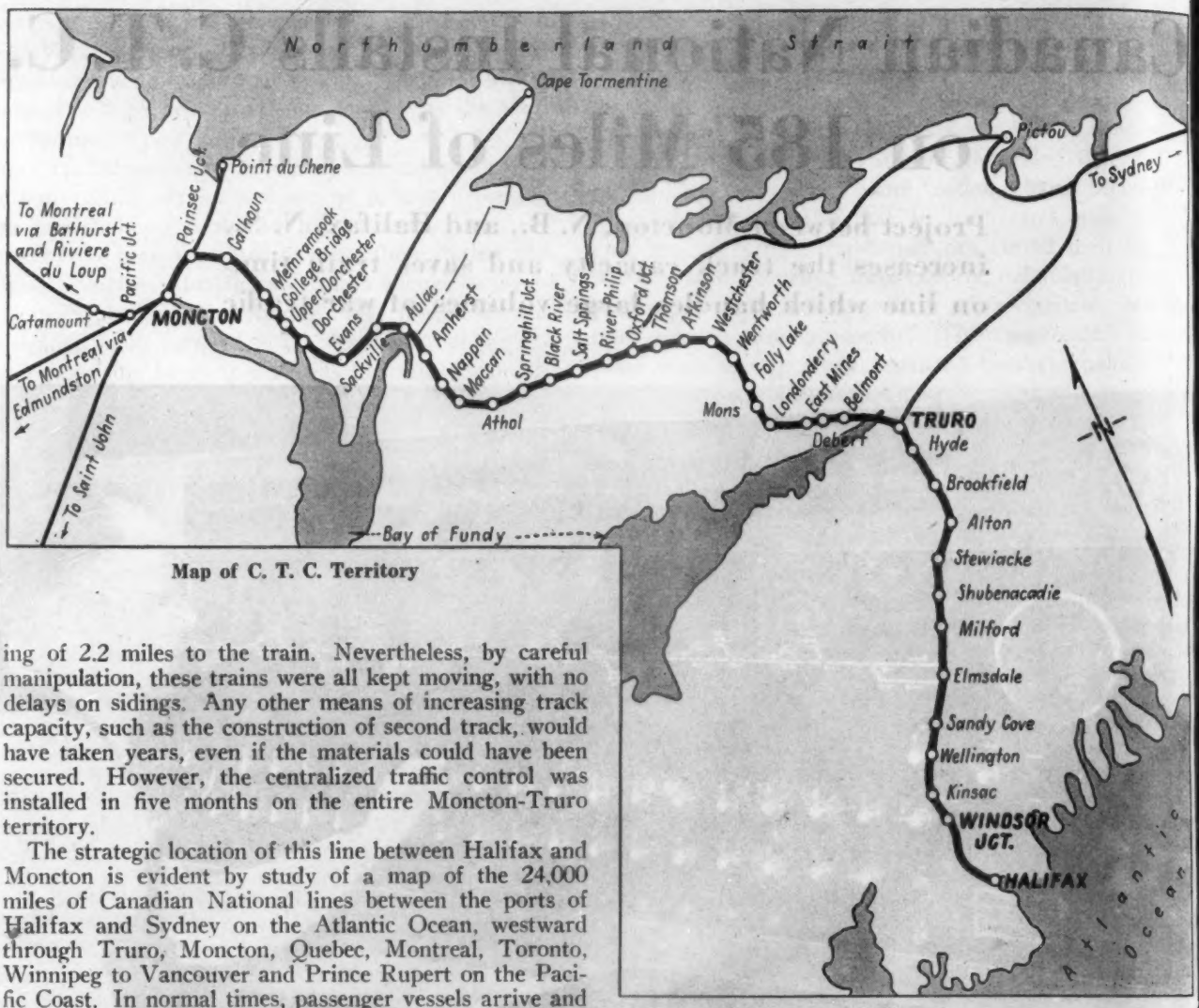


The C. T. C. Control Machine at Halifax for the Truro-Halifax Territory.

AS A MEANS for increasing track capacity and reducing train delays on a busy territory, the Canadian National has installed centralized traffic control on 185 miles of line, mostly single track, between Catamount, N. B., 12 miles west of Moncton, and Windsor Junction, which is 16 miles west of Halifax, N. S. Included in this territory is an operating district 124.7 miles long between Moncton, N. B., and Truro, N. S. Comparing operations for this district for the month of March of the years immediately before and after the C. T. C. was installed, the average overall speed of through freight trains was increased from 13.84 m.p.h. to 18.06 m.p.h., resulting in a reduction in overall time from approximately 9 hours to 6 hours 54 minutes. These savings were made in spite of the fact that 115 more trains were operated in March of the second year. Comparing the corresponding months, gross ton-miles increased from 134,955,395 to 154,749,549, or 14.67 per cent, and net ton-miles increased from 62,932,913 to 77,350,643, or 22.9 per cent.

This saving in train time is due in part to power switch machines, and in part to the use of signals rather than timetables and train orders to authorize train movements. For example, with the power switches, a train can pull out of a siding, proceed on the main line, and enter another siding, in 20 to 25 minutes less time than where hand-throw switches are in service. With previous practice, trains had to clear superior trains at least 10 minutes, or clear other trains in advance of their arrival at the next siding. The illuminated track diagram and the graphic train recorder on the C. T. C. machine show the locations of all trains, so that the dispatcher can determine whether he can advance trains for close meets. As a result, approximately half the meets are so closely timed that neither train stops.

Prior to the completion of this installation, a dispatcher would issue from 45 to 65 train orders in eight hours on the 65 miles between Moncton and Springhill Junction. In some instances, he could not issue orders fast enough, and, as a result, trains would be forced to wait for orders. On some occasions when superior trains were running late, freight trains would wait for an hour to two hours on sidings because orders could not be issued and delivered. On the other hand, with C. T. C., in one instance there were 22 "trains on the board" between Moncton and Amherst East, 48.3 miles, an average spac-



Map of C. T. C. Territory

ing of 2.2 miles to the train. Nevertheless, by careful manipulation, these trains were all kept moving, with no delays on sidings. Any other means of increasing track capacity, such as the construction of second track, would have taken years, even if the materials could have been secured. However, the centralized traffic control was installed in five months on the entire Moncton-Truro territory.

The strategic location of this line between Halifax and Moncton is evident by study of a map of the 24,000 miles of Canadian National lines between the ports of Halifax and Sydney on the Atlantic Ocean, westward through Truro, Moncton, Quebec, Montreal, Toronto, Winnipeg to Vancouver and Prince Rupert on the Pacific Coast. In normal times, passenger vessels arrive and depart from the port of Quebec, which is at tidewater, although 832 miles from the ocean. Many freight vessels likewise dock at Quebec, while many more traverse the St. Lawrence river up to Montreal or on up the Great Lakes to various inland ports. In the winter, navigation is closed on the St. Lawrence, whereas the port of Halifax is open the year around. A further factor was the presence of enemy submarines in the Gulf of the St. Lawrence, which made it impracticable to use these waters for shipping. All of this led to the fact that as Canada increased its war program, more traffic was routed through the port of Halifax. Westward traffic includes fruit and agricultural products from Nova Scotia, steel from Sydney, and coal from Sydney, Springhill Junction and Maccan.

Only One Railroad to Halifax

The line between Moncton and Truro is the only railroad traversing the isthmus which connects Nova Scotia with the continent proper. Near Moncton, three railroad lines converge. One line, extending north and west via Bathurst and Riviere du Loup to Montreal, handles through passenger and local freight trains. The second line, extending from Moncton west through McGivney, N. B., and Edmunston, N. B., to Montreal, handles most of the through freight. A third line from Moncton extending south to Saint John, N. B., handles local traffic as well as through business moving to and from Boston, Mass., and other points in the United States. Beyond Truro, 124 miles east of Moncton, the principal main line extends south 64 miles to Halifax, and a second line extends north and east 224 miles to Sydney, N. S. Thus the territory between Moncton and Truro constitutes a bottleneck.

Not only from the standpoint of the heavy traffic but also because of numerous curves, long heavy grades, and total rise and fall, the 124-mile section between Moncton and Truro is one of the most difficult for train operation on the Canadian National. In consideration of these physical difficulties, the benefits effected by the centralized traffic control are all the more striking. The long grades and large total rise and fall result from the fact that the track is only 25 to 30 ft. above tidewater at several places, while between these points it passes over ridges varying from 225 to 615 ft. above sea level. Between East Mines and Folly Lake, 11.1 miles, the line ascends from 200 ft. to 615 ft., with grades ranging up to 1.47 per cent, this being the ruling grade westbound on the eastern half of the territory, with a tonnage rating of 1,930 tons. From Folly Lake the line then descends westward for about 23 miles to an elevation of 100 ft. at Oxford Junction. In this section the ruling ascending grade eastward varies from 0.8 to 1.11 per cent for 2 miles through and just east of Westchester. The tonnage rating fixed by this grade is 2,420 tons.

Between Oxford Junction and Springhill Junction, the line is rolling with short grades ranging up to 1.1 per

cent. Beyond the latter point a ruling grade of 0.9 to 1.05 per cent for 2.1 miles against eastward traffic limits the tonnage to 2,300 tons. Starting two miles west of Sackville, the line ascends westward 125 ft. in 3.8 miles, this being a ruling grade westward, on which the rating is 2,260 tons. From Evans to Dorchester the grade descends westward practically all the way for 4.5 miles, and much of this is from 1.00 per cent to a maximum of 1.25 per cent and the curvature is bad. This section is the ruling grade eastward on the west half of the Moncton-Truro territory, the tonnage rating being 2,040 tons. For about 10 miles from the east end of Dorchester to a point west of Memramcook, the line is on marsh land in the valley of the Memramcook river at an elevation ranging from 20 ft. to 30 ft.

Large Volume of Important Traffic

Four scheduled through passenger trains are operated in each direction daily, each consisting of 14 to 16 cars. One passenger train in each direction daily to and from the Tormentine-Prince Edward Island line also uses the C. T. C. territory between Moncton and Sackville. Approximately 15 through freight trains are operated in each direction daily. The local freight trains operate on short runs, but in effect there is a way-freight in each direction daily except Sunday over the entire territory. A switching crew makes a round trip from Truro to Sibert and East Mines daily, and similarly a switching crew with headquarters at Sackville works out to Amherst and returns to Sackville daily. A large coal mine is located on a branch line out of Springhill Junction, and certain trains set out empty cars and pick up loaded cars at this yard, which lies south of the passing track.

On an average day, therefore, the traffic on the Moncton-Truro territory includes 8 through passenger trains, about 30 through freight trains, and 10 to 20 local freight, branch passenger, switcher movements, mine pickups and work trains, bringing the total to 50 to 80 train movements over all or part of the territory. For example, on June 2, 1944, there were 78 train movements on this territory.

The arrangements at the ends of double track, at special siding layouts and at junctions are considerably more complicated than on a conventional single-track line with a succession of single siding layouts. Therefore, from the standpoint of track arrangement, switching operations, signaling and the control of train movements by signals, this Moncton-Truro territory includes numerous practices that may be applicable to similar problems elsewhere.

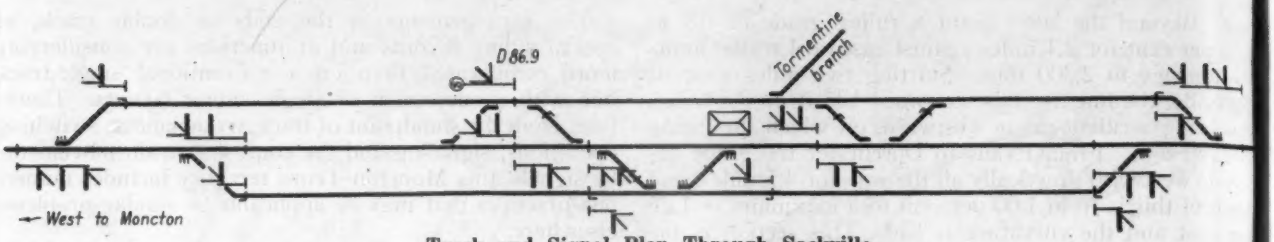
Double track extends through Moncton and to Painsec Jct., 7.2 miles; westward from Truro to Belmont, 7.5 miles; and between Maccan and Springhill West, 9 miles. These three sections of double track total 24 miles, the remaining 100 miles between Moncton and Truro being single track. On the sections of single track between Painsec Junction and Maccan, as well as between Springhill and Belmont, there are sidings at the towns which are indicated by dots on the accompanying map. Also extensions of second track form single sidings at Painsec Jct., at Maccan, and at Springhill.

With certain exceptions, the single sidings have capacities ranging from 60 to 70 cars. At Evans, a long siding is provided with two crossovers near the middle at the summit of grades from each direction. This arrangement saves time when a train has to double the hill either way up to Evans. Similarly there are long sidings with crossovers at Springhill Junction and at Sackville. At Folly Lake there are two sidings, both on the north side of the main track. At Upper Dorchester there are sidings on each side of the main track.

Electric Switch Mechanisms

With few exceptions, the centralized traffic control includes electric switch machines at the siding switches, at the ends of double track, and at the crossovers. The distance between Dorchester and Upper Dorchester is only 2.7 miles, and from Upper Dorchester to College Bridge, 2.8 miles. For these reasons, with the C. T. C., there is not much occasion to use the sidings at Upper Dorchester for the passing of through trains. Therefore, the switches of these sidings, one on each side of the main

Westbound Passenger Train Leaving Truro



Track and Signal Plan Through Sackville

track, are equipped with spring switch mechanisms rather than switch machines. Similarly, spring mechanisms were installed at the switches of the single siding at River Philip, and at Memramcook.

Signaling Arrangements

The signals are the searchlight type, and the C. T. C.-controlled signals display the same aspects as those standard for interlocking home signals on the Canadian National. At the end of a power-operated siding, the station-entering signal has three signal units. The upper unit displays three aspects which apply to through movements on the main track. The middle unit is a fixed red marker to represent a medium speed route which does not exist in such a layout. The bottom unit is a searchlight mechanism which normally displays red, but when the switch is reversed this unit displays yellow under two reds, indicating that a train should proceed at slow speed into a siding.

The main track station-leaving signals each have two units, the upper being a three-aspect searchlight unit, and the lower a red marker to complete the standard "Stop" aspect. These leave-station main track signals are on masts at the immediate right of the track governed, at a point opposite the fouling on the turnout. Where a siding is on the north side of the main track, as, for example, at Wentworth, the west end of the siding was thrown over to 21 ft. centers to permit the signal to be located at the immediate right of the main track.

When a train is to be directed to stop and enter a siding equipped with a spring switch mechanism, as, for example, at the west end of Memramcook, the station-entering signal is controlled to display an aspect of red-over-red-over-red over a lighted unit outlining a letter "S" on a black background. This aspect indicates that the train is to stop and that the head brakeman is to throw the hand-operated stand to reverse the switch. When the switch is reversed, the signal displays an aspect of red-over-red-over-yellow, directing the train to enter the siding, after which the switch is returned to normal. When the train is to depart, the leave-siding signal displays the usual aspects, and the train trails out through the spring switch without stopping.

Sackville a Busy Place

At Sackville, the branch line fom Cape Tormentine connects with the siding which lies to the north of the main track, this junction switch being operated by a hand-throw stand. This siding is 1.6 miles in length, with a power switch at each end, and a set of hand-throw crossovers connecting to the main track at each end of the station platform. A westbound passenger train from Cape Tormentine can use the west portion of this siding to enter the main track through the power switch, or if this part of the siding is occupied, and the dispatcher authorizes the train to enter the main track at the hand-throw crossover west of the station, he controls the dwarf signal at the crossover to display a lette "S" over red. This authorizes the trainman to revers the crossover switches, after which the letter "S" is ex tinguished and a yellow or a green aspect is displayed o the dwarf, depending on whether one, or two or more automatic blocks ahead are clear.

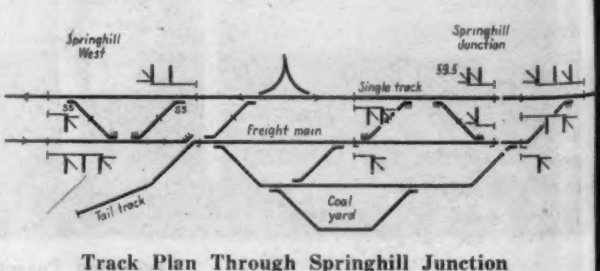
C. T. C. controlled signals for each direction on th main line are located at each end of the station platform limits so that while a passenger train is standing at th station within these signal limits, a second train, as, fo example, an eastbound Cape Tormentine train, can b brought up to the hand-throw crossover to enter th siding. Such a move would be made if the west part o the siding north of the main track were occupied. Whe operating with timetables and train orders, Sackville wa frequently congested with trains. With the C. T. C however, train movements are directed more efficiently thereby preventing delays and congestion at Sackville

Springhill Junction

All trains take coal and water at Springhill Junctio and in many instances, freight trains set out or pick u cars here. Eastbound passenger trains cross over a Springhill West and use the "north" track from Spring hill West to Springhill Junction as single track. Th switch at the east end of this crossover is equipped wit a spring mechanism with the points set normally fo westbound train movements from the single track to th right-hand track west of this crossover. Therefore, a train springs the points for an eastward train movemen from the eastward main track over this crossover to th single track.

Eastbound passenger locomotives are cut off at th station and run ahead to get coal and water. Th train is left west of the controlled crossovers at th station, and the locomotive moves to the coaling plan east of the controlled limits. Under this circumstance the dispatcher can clear the low-speed signal to permi the locomotive to return to its train.

Eastbound freight trains approaching Springhill We are routed over the so-called freight main, which is a continuation of the second main track. This freigh main is adjacent the yard so that cars can be set ou or picked up without interfering with the movement o other trains on the single track main line. Westboun freight trains, likewise, are routed over this freight main and, when ready to depart, they use the west crossove



Track Plan Through Springhill Junction

at Springhill West. This crossover is provided with a power machine at the east end but a spring mechanism is used at the east end because no selection of routes in the facing-point direction need be made at this switch.

Runaway Protection

The crest of the grade is about midway between Springhill Junction and Springhill West, and the grade descends at a rate of about 1 per cent for 2.6 miles from Springhill West. Years ago a string of cars drifted west from Springhill Junction, down the eastbound main track and met an eastbound passenger train. For this reason an extra switch, leading to a tail track, was installed in the so-called freight main just east of Springhill West. This switch is normally set to divert westbound cars to the tail track. When an eastbound freight train is to be routed to the freight main, the west switch of the east crossover at Springhill West is lined accordingly but the signal does not clear until the train is about 4,000 ft. from the signal, at which time the derailing switch is reversed automatically, and the signal clears. After the rear of the train clears the derailing switch, the switch returns automatically to the derailing position without any action on the part of the dispatcher.

To permit a westbound train movement to be made from the freight main to the westbound track on the double track, the dispatcher sends out a control to the east switch of the crossover, and a trainman, in telephone conversation with the dispatcher, pushes a control button in the telephone booth. This combined control causes the derailing switch to be reversed; then the signal clears for the train to depart. As soon as the rear of the train clears the detector track circuit, the derailing switch returns automatically to its normal derailing position to divert cars to the tail track.

Intermediate Signals

Where the distance between sidings is comparatively short, as, for example, 1.8 miles between Debert and East Mines, or 2.7 miles between Mons and Folly Lake, no intermediate automatic block signals were installed, there being a total of seven such instances on the Moncton-Truro section. In these cases, the manual block as well as automatic block is from station-to-station, and the semi-automatic leaving signal at one siding acts also as a "distant" signal to the semi-automatic station-entering signal at the next siding. Where the distance between sidings ranges from 3 miles, as, for example, between East Mines and Londonery, to 4.2 miles between Wentworth and Westchester, there is one double location of intermediate signals. On the Moncton-Truro territory as a whole, there are a total of 13 such station-to-station blocks with one double location of intermediates.

C. T. C. Control Machine

Where the siding is short or where the grades are descending so that there would not be train braking distance between the signals at the two ends of a siding, the signal in approach has two searchlight mechanisms. It normally displays the yellow-over-red, Approach, aspect, but if the signal ahead is displaying the Approach aspect, the "distant" signal then displays the yellow-over-yellow, Advance-Approach, aspect, which indicates proceed prepared to stop at the second signal.

Prior to the C. T. C. installation, train movements were authorized by timetable and train orders, and, prior to the war, one dispatcher handled the Moncton-Truro section, but after the war traffic increased, two dispatchers were required, one for the Moncton-Springhill section and the other for the Springhill-Truro section. These dispatchers were located in the office at Moncton. In a similar manner, the one C. T. C. control machine in the dispatcher's office at Moncton now controls the entire 124.7 miles of territory between Moncton and Truro. On account of the heavy traffic which has been handled since the C. T. C. was placed in service, two dispatchers have been assigned to each trick to operate this machine. The machine is arranged in a "U," with a center panel and two wings which are 6 ft. 3 in. apart, thus allowing space for the two dispatchers to be seated at their work.

An all-electric graphic train recorder is mounted in the desk portion of the control machine. The recorder sheet moves at the rate of 2 in. per hour. When a train occupies any one of the 58 OS track circuits, a corresponding stylus is energized to burn a mark on the paper chart. At his convenience, the dispatcher connects these marks with pen lines, thus completing a record of the train movements in the form of a time-distance chart. On a separate heading sheet, a record is kept of the train and engine numbers, the names of the enginemen and conductors, the number of loads and empties, the tonnage, etc. Each morning the sheet for 24 hours is torn off the graphic train sheet, on the line representing the previous midnight, the heading sheet is pasted to it, and this becomes the official record of train movements.

The Truro-Halifax C. T. C.

A second portion of the centralized traffic control, extending between Truro and Windsor Junction, includes 2.5 miles of double track between Truro and Hyde, and 45.7 miles of single track between Hyde and Windsor Junction. Double track, with automatic block signaling for right-hand running, has been in service for many years on the 15.8 miles between Windsor Junction and Halifax.

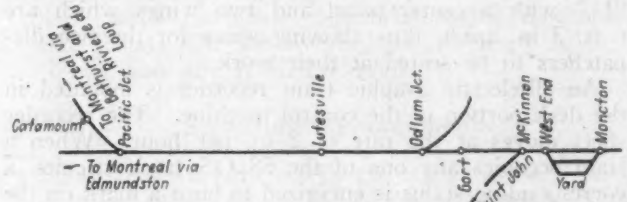
On the Truro-Windsor Junction territory, the line crosses rolling country with elevations ranging from about 40 ft., at river crossings, to a maximum of 182 ft. at a point between Hyde and Brookfield. From Milford to a point 2 miles south, the grade ranges from 0.5 to 0.7 per cent. The south approach to this hill is about 1 mile long, with grades ranging from 0.64 to 0.89 per cent. These are the ruling grades. The curvature is light, except on a short section just north of Wellington, where there are nine curves ranging up to 2 deg. 55 min. within a distance of three miles. As a result of the light grades and curvature, this Truro-Windsor Junction section is "fast track," as compared with the Truro-Moncton territory.

Between Hyde and Windsor Junction there are 9 single sidings ranging from 70 to 90 car capacities. When installing the C. T. C., three additional sidings were taken out of service: Lantz, between Elmsdale and Milford; Enfield, between Elmsdale and Sandy Grove; and Hilden, between Brookfield and Hyde. As part of the C. T. C. project, electric switch machines were installed at the 18 remaining siding switches. The end-of-double-track switches at Hyde and at Windsor Junction are operated by spring and buffer mechanisms. The turnouts at the ends of the sidings are No. 12, and those at the ends of double track are No. 20.

The distance between sidings is approximately 3 miles except where sidings were removed; for example, the

distance between Milford and Elmsdale is 5.6 miles. In all instances, however, there is only one double location of intermediate signals between sidings, this practice being adopted in contrast to using more intermediates because of the comparatively high train speeds, thereby reducing the delay for a train leaving a siding after being passed by a train of the same direction on the main track.

The lengths of the sidings are such that the distance between signals at the two ends ranges from 3,750 ft. to 4,250 ft., which is not considered to be adequate for



General Layout Between Catamount and Moncton

train stopping distance at 65 m.p.h. For this reason, all intermediate signals are equipped with a second searchlight unit which normally displays red, but when the second signal ahead displays the Stop aspect, the intermediate displays the Advance-Approach, yellow-over-yellow aspect, which indicates "proceed preparing to stop at second signal."

Time Saved by C. T. C.

The centralized traffic control between Truro and Windsor Junction is controlled by a machine in the dispatcher's office at Halifax, one dispatcher being assigned to the operation of this machine exclusively. In addition to 4 through passenger trains each way daily, the Truro-Halifax district also handles three passenger trains in each direction daily between Halifax and Sydney via Truro. On an average day there are about 10 through freight trains and a local freight each way daily; thus, with special extra trains, the combined average is 40 to 48 train movements daily.

When operating by timetable and train orders, the passenger trains were given preference to the extent that during the inbound morning and outbound evening rush hours, freight trains lost considerable time on sidings or in the yards after being ready to go. With the C. T. C. there are, in numerous instances, as many as 20 trains "on the board," and they are handled in such manner that little time is lost while waiting.

Extra Trains Easily Handled

On the average, a through freight can now make the run in either direction between Truro and Windsor Junction in about 45 minutes less time than previously. While freight trains which previously lost time in the yard and which are now moved when they are ready to go, save a total of an hour to two hours or more. Considered as a whole, therefore, the C. T. C. saves an average about 1 hour and 30 minutes for through freight trains on this 45 miles of territory. If the passenger trains are running late they can easily make up time, and extra passenger trains can be handled much faster than previously. On certain occasions there has been a preponderance of traffic eastbound into Halifax, for instance, in one 11½ hour period 18 extra eastbound trains were operated into Halifax from Truro, in addition to the regular scheduled trains. This volume of traffic could not have been handled without serious delay if the C. T. C. had not been in service.

C. T. C. West of Moncton

A third portion of the C. T. C. project extends west from Moncton to Catamount, 12 miles. At West End, which is at the west end of the Moncton freight yards, there is a C. T. C. control machine which includes the control of the switches, crossovers and signals from Moncton to, but not including, Pacific Junction. This territory includes, at West End, a track layout including 4 crossovers and a yard lead switch, as well as either-direction signaling on all three tracks between West End and Mc Kinnon, at which point there is a junction with the line to Saint John, including two crossovers. Also, the West End machine includes control of signals at the end of double track at Gort, the control of a power switch at Odlum leading to Franklin Yard, and the power switches and signals at a single siding at Lutesville. At Pacific Junction, where the freight line via Edmunston connects with the main line via Campbellton, a mechanical interlocking was replaced with an electric plant which includes remote control for a power switch and signals at the east end of the siding at Catamount, which is 12 miles from the freight yard at Moncton. Thus the overall C. T. C. projects from Catamount through Moncton and Truro to Windsor Junction totals 185 road miles.

The centralized traffic control was installed under the jurisdiction of R. G. Gage, chief electrical engineer of the Canadian National. The General Railway Signal Company, Rochester, N. Y., furnished the major items of equipment, including the signals, switch machines, relays, code line apparatus, and the C. T. C. machines, and the construction was done under contract by the General Railway Signal Company of Canada, Ltd.

Buna S Electrical Insulation

NUBUN, a new synthetic rubber latex insulation for power, lighting and communication cable has been developed by the United States Rubber Company, New York, N. Y. It is made from a special modification of the Buna S synthetic rubber used for tire manufacture. The qualities of Nubun include flexibility, impermeability to water, laminated construction, and, since it is made by the latex continuous dip method, perfect centering of the conductor to produce an insulated wire of maximum conductivity and minimum diameter.

The insulation has a voltage breakdown after submersion in water at room temperature of 650 volts per mil of thickness and a tensile strength of 2,500 lb. sq. in. before aging, and 2,000 lb. per sq. in. after aging 96 hours in an oxygen bomb. It will resist severe wear because by the nature of the latex process, the rubber particles are not distorted or broken down by milling.

The standard GR-S rubber found most advantageous for the greater part of the Government's program and for most military applications is based on a 75 per cent butadiene—25 per cent styrene composition. The modified polymer used for Nubun has a special styrene ratio and is prepared by a modified reaction technique which gives it improved processing and insulating properties.

Williamson Resigns from N. Y. C.

Gustav Metzman, vice-president, with headquarters in Chicago, becomes chief executive, effective September 1

FREDERICK E. WILLIAMSON, acting upon the advice of his physicians, has resigned as president of the New York Central, a position he has held for nearly 13 years, and from all other of his responsibilities in subsidiary companies of the System, it was announced by the board of directors, August 14. Gustav Metzman, vice-president, with headquarters in Chicago, has been elected president to succeed Mr. Williamson, who will continue in an advisory capacity until the end of this year.

Photo by Blackstone Studios

Frederick E. Williamson

Gustav Metzman

The board of directors, in accepting his resignation with "great reluctance and deep regret," paid tribute to Mr. Williamson for his leadership throughout the years of depression, and in the present war years, when the "problems of management and operation became even more complicated and burdensome." It was observed that the retiring 68-year-old executive, president since January 1, 1932, had served the railroad industry and his company with "salutary distinction." Referring to the morale prevailing on the New York Central, he is credited with having "inspired loyalty and enthusiasm throughout the ranks of the organization."

Mr. Williamson was born at Norwalk, Ohio, June 14, 1876. He attended the University school, in Cleveland, and graduated with an A.B. degree from Yale, in 1898. Except for his military service in World War I, and six years during which he occupied various positions on western roads, Mr. Williamson has devoted his entire career to the New York Central. His first job with that road was in 1898, when he began as clerk on the Mohawk division, in Albany. He served successively, until 1917, as claim agent, freight agent, car accountant, assistant division superintendent and division superintendent. In 1917 and 1918, he was attached to the U. S. Railroad Administration in New York, and in the seven years following he acted as general superintendent and assistant to general manager of the New York Central. Mr. Williamson went with the Northern Pacific, in July, 1925, as vice-president in charge of operation and maintenance. Three years later, he became executive vice-president of the Chicago, Burlington & Quincy, and the Colorado & Southern, in January, 1929, becoming chairman of the executive committee and president of these latter two roads.

On January 1, 1932, he returned to the New York Central as president and director of the System and its subsidiaries. During the 22 days of government operation of the railroads several months ago, Mr. Williamson was commissioned a colonel in the Army and was one of seven regional officers put in charge. He directed Eastern region activities.

For many years he has been president of the Eastern Railroads Presidents' Conference, a director and member of the executive committee, Association of American Railroads, and director of the Central of New Jersey. Mr. Williamson holds memberships in the American Railway Engineering Association and in the New York Railroad Club.

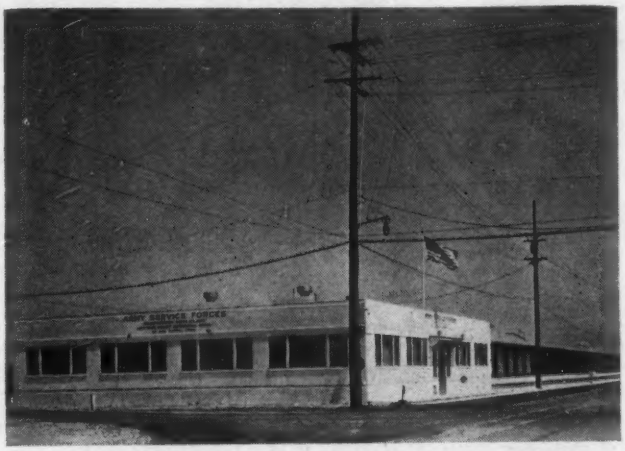
Mr. Metzman, the new chief executive, who has been in railroading 41 years, was born at Baltimore, Md., June 23, 1886. He attended Polytechnic Institute, in Baltimore, and began his railroad career on the Baltimore & Ohio, in 1903. From 1916-1917, he was on the staff of the Eastern Presidents' Conference, and with the U. S. R. A. in the two years following. In 1920, he entered the employ of the New York Central, as transportation assistant to the vice-president. Two years later he was appointed transportation assistant to the president, which position he held until January 1, 1929, when he was promoted to manager of freight transportation. This position he occupied until 1940, when he was made assistant vice-president, with headquarters at Chicago. Granted a leave of absence in March, 1942, Mr. Metzman became chief of the Rail Division, Transportation Corps, U. S. Army in Washington. Six months later he returned to the New York Central as assistant vice-president and general manager of the Big Four, with headquarters at Cincinnati. He later became vice-president and general manager. On January 1 of this year, Mr. Metzman was named vice-president with headquarters at Chicago, and with jurisdiction over the New York Central line west of Buffalo, the Big Four, the Michigan Central, the Indiana Harbor Belt and the Chicago River & Indiana Railroad.

Army-Navy Forwarding Operation Speeds L. C. L. War Freight

Service inaugurated two years ago has expedited shipments, reduced costs, and conserved railroad equipment; record for using refrigerator cars for California and Utah traffic is outstanding

FREIGHT forwarding operations inaugurated a little over two years ago by the Army Transportation Corps' Traffic Control Division have greatly expedited the railroad journeys of war materials moving in l.c.l. quantities while the same time reducing War Department shipping costs and conserving railroad equipment. Colonel W. J. Williamson, chief of the Traffic Control Division, said in a recent interview that he is "very proud" of the forwarding operation, which "has met a need in the War Department and met the requirements of the overseas commanders."

He is also proud of his organization's record in utilizing, for westbound movements, refrigerator cars which would otherwise return empty to California and Utah points. These reefers are used under the provisions of the Interstate Commerce Commission's Service Order 104 which permits two or three of them to be placed in lieu of one box car for westbound loading. As Colonel Williamson put it, the Traffic Control Division has "gone to extremes" in utilizing the empty reefer space, making a much better record in that connection than the freight forwarders.



Oakland, Calif., Station, Built by Atchison, Topeka & Santa Fe and Leased to the Army, Is Regarded by T. C. D. as One of the Most Modern Freight Handling Facilities in Use

Operations at the Stations Are the "Most Highly Mechanized of Any Freight Service"

Operate 14 Stations

The service, which handles Navy as well as Army freight, has grown to the point where it includes five consolidating stations and nine distributing stations located in railroad-owned freight houses. Approximately 5,000 cars carrying about 150 million pounds of freight are now being dispatched from the consolidating stations each month. The operation is carried on under the direction of the Traffic Control Division's Consolidating and Distributing Agencies Branch, with Major James Sloss as branch chief and Captain J. B. McAnulty as assistant to chief.

It came about as a result of Colonel Williamson's finding that l.c.l. handling was one of the "most critical" situations he encountered when he became head of T. C. D. There was an effective control set-up for the Army's carload freight, but l.c.l. was routed haphazardly by local transportation officers. An l.c.l. tonnage survey revealed that there was a heavy movement to western points which could be consolidated into carloads at Chicago. Thus the inauguration of the operation with a consolidating station at Chicago and distributing stations at San Francisco, Calif., and Los Angeles.

Local transportation officers were instructed to ship all l.c.l. originating in Official Territory and destined for western points to the Chicago station. On the station's first day—July 1, 1942—it received 340 lb. of freight. The following day it received enough more to make a carload, and it has never since failed to receive enough for a carload each day. At the present time the average forwardings from Chicago run to 80 cars a day.

For the operation of its stations, T. C. D. has from the outset recruited men with experience in railroad l.c.l. and freight forwarder operations. The success of the venture is attributed by Major Sloss to the fact that these men "know their stuff."

Shortly after the opening of the Chicago and San Francisco and Los Angeles stations, the desirability of establishing a distributing station in Utah and consolidating stations at New York and Philadelphia became apparent. The Utah station was established August 15, 1942, while the New York and Philadelphia consolidating stations

were brought in a month later, when distributing stations were also set up in Army depots at Fort Worth, Tex., and San Antonio. About the same time an eastbound service from Chicago to New York and Philadelphia was added. In January, 1943, distributing stations were opened at Portland, Ore., Seattle, Wash., and Spokane.

Half of Tonnage Is Navy Freight

The big push came on February 1, 1943, when the Navy began participating in the service. The Navy had been interested from the outset, but certain accounting problems had to be resolved before it could come in. The Navy's tonnage now amounts to about half the total, and its interests are in the hands of liaison officers assigned to each station. Lieutenant (JG) Howard Amor functions as the Navy's liaison officer with T. C. D. headquarters, under the supervision of Commander F. C. Toal, Chief of the Transportation Division, Bureau of Supplies and Accounts.

Meanwhile stations in addition to those mentioned above have been established from time to time. They are at St. Louis, Mo., Tacoma, Wash., Oakland, Calif., El Paso, Tex., and Atlanta, Ga. The operation at San Antonio soon outgrew the facilities available at the Army depot there and now has its own station, while consolidation and distribution in the Ogden, Utah, area are handled at the Ogden arsenal. At Memphis, Tenn., there is what Major Sloss describes as a "rather informal" operation.

Also, the Army ships many consolidated cars which do not go through the consolidating stations. And there is still a substantial amount of Army l.c.l. left for the commercial forwarders to handle. It is pointed out that when the operation was established Army regulations precluded the use of commercial forwarder services, since the forwarders were then unregulated and their rates unpublished.

Stations Highly Mechanized

The principal reason for the reduced cost and expedited handling at the Army-Navy consolidating and distributing stations is mechanization. The operation is the "most highly mechanized of any freight service" is the way Major Sloss puts it. Full use is made of such equipment as fork lift trucks, warehouse tractors, hydraulic lifts, hoists, cranes, etc. Without this equipment, it is conceded that the job could not be done; for the necessary manpower could not be recruited. Newly-built stations leased from the Atchison, Topeka, & Santa Fe at Oakland, and from the Great Northern at Seattle are called "the most modern freight handling facilities in use."

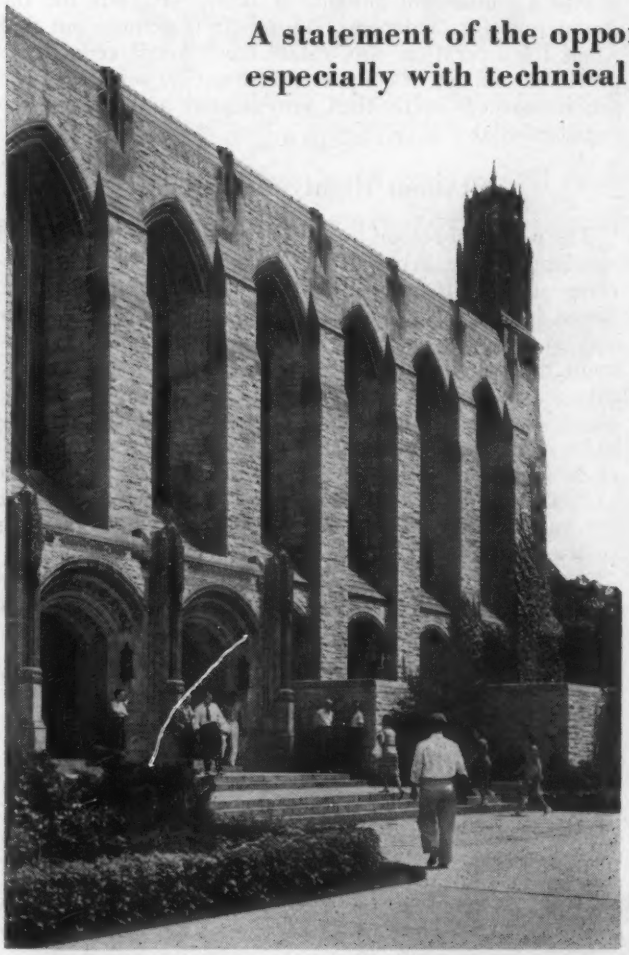
Another factor in the efficient operation of the stations is the all-commodity rate set-up accorded the government

(*Continued on page 308*)

The Chicago Consolidating Station Where Average Forwardings Now Run to 80 Cars a Day

The Railways and the Colleges*

A statement of the opportunities for the graduate, especially with technical training, in postwar days



On the Campus of Northwestern University, at Evanston, Ill.

By R. E. Dougherty,

Vice President, New York Central System

THE Board of Directors of the American Railway Engineering Association, reestablished its committee on Cooperative Relations with Universities in 1940. Railroad executives, without exception, have expressed great interest in this work. Likewise interest among the universities has been most gratifying. Expressions of opinion from university men have in some instances been decidedly critical of the past of the railroads and skeptical of the future. This line of thought, coupled with the glamour of certain competing forms of transportation, and other reasons, has been manifested by a growing lack of interest among students in the railroad courses and the discontinuance by the universities of certain railroad subjects which some of us had the privilege of taking.

One of the most cruel phases of the years of depression was the fact that boys graduating from universities, filled with hope and ambition and well equipped, found insufficient place in industry, and I dare say that that was true not only of the railroads but of almost every other form of industry. In the 'Twenties the total employment on the roads averaged about 1,800,000. This was reduced in the 'Thirties to about 1,000,000 and was less than that figure in 1933 and 1938; it now approximates 1,300,000.

I am optimistic as to the future of the railroads and have faith that they will continue to serve as the major transportation agency for any period of time which it is possible for any of us to foresee. We realize fully that much of the intensive competition of the pre-war period will be revived and probably accentuated. The railroads have been studying their own problems most intensively. The Association of American Railroads has had a committee of nearly fifty executive officers working for two years on the study of transportation, taking all phases of it into account. Similarly, most of the roads, certainly the larger systems, have their own research organizations which are studying their individual problems. In all of this it seems that if the country is prosperous, the volume of business will be there for the railroads but if the country is not prosperous we will all suffer together.

Opportunities in the Years Ahead

The experiences of the depression, coupled with the war and other factors have created situations such as that which the New York Central faces in the not far distant future. Within the next ten years there will be over 500 positions of responsibility and importance on this one railroad where the present incumbents will retire on account of having reached the age of 70. This number may be increased by physical disability and incapacity, requiring the retirement of others prematurely. Similar situations prevail on many other roads.

There will be no lack of capable men who may be required to fill the important positions during the next decade but I am much concerned with the lack of younger men in their twenties and early thirties who, in the normal course of events, would fill these executive positions of importance in the coming generation. I realize that there are many men in the Army, particularly in the Military Railway Service, in Africa, Italy, India and probably soon, if not already, in France, who are receiving a post graduate education that no university or railroad organization could furnish, and many of them who come back will still be young men. In filling executive positions, there is no substitute for the experience which time provides, even to capable men, but there must be a supply of well-trained young men to follow.

I approach consideration of the future of the engineer on the railroads, and have always considered it, from an exceedingly broad standpoint. In other words, I do not believe that his functions should be limited to the determination of stresses and strains and stability and with field parties, construction and similar activities. When a project is once authorized, its execution can be developed along well established lines. One of the most im-

* Abstracted from an address before the Administratie section of the Society for the Promotion of Engineering Education at the annual meeting of this Society at Cincinnati, Ohio on June 24.

portant fields for the engineer, however, is in determining the economics and wisdom of the project and I believe that one of his greatest opportunities lies in the field of economics which is allied to operation. For many years engineers have been given assignments of this character in constantly increasing magnitude and number, and many an operating vice president has an engineering assistant helping him analyze his problems, many of them having to do exclusively with operation.

A Broadening Field

The right kind of an engineer should have the opportunity to enter the operating department. Traffic officers have shown increasing interest in the engineer, particularly in the location and development of the physical plants of industry. The real estate officer finds the engineer of value to him in his various problems, including development, appraisals, assessments, etc. In fact there is an increasingly important field in valuation, depreciation, etc., from the real estate, rate-making and income tax standpoints for the engineer with C. P. A. inclinations. Our insurance and fire protection problems have, for years, been under the jurisdiction of engineers. There is a field for the engineer in the purchasing department, particularly having to do with the purchase of materials for the construction of track, structures and equipment.

Many railroads face extensive problems having to do with the development of coal, oil and timber lands. Analytical studies involving not only immediate operation, but consolidation and coordination, are frequently developed by the engineering analyst in conjunction with the operating, traffic and legal officers. Beginning about 1900 and continuing to the depression there was a tremendous amount of expansion and reconstruction of existing facilities. Such improvements have given the railroads a plant capable of carrying the greatest business in their history.

Foresee Changes in Railroad Plant

There are many improvements under consideration that are a sequel to studies of increases in speed and improvements in freight and passenger service. Probably the greatest change in railroad plant in the next generation will have to do with motive power and other equipment, particularly the former, although there will be many changes in track and supporting facilities to expedite operation. The present indications are that the Federal government, states and municipalities will initiate a very substantial amount of grade crossing elimination work, reconstruction of existing highway-railroad crossings and similar projects which will involve co-operation by the railroads.

The railroads are giving concentrated attention to improved steam power, including steam turbines and other variations. There has been substantial use of Diesels, which many roads will extend. Roads with heavy density of traffic have been studying electrification or its extension. It may be that the gas turbine will be a factor in the future. Much of this will also involve considerations that will be of considerable concern to the coal and petroleum industries. The problems of research on a railroad are practically unlimited but it will be up to the engineer to insure that his imagination does not run away with his economics.

While the railroads in the past may have seemed to have taken insufficient interest in the engineer, a canvass of the railroads a few years ago showed that 35 per cent of the executive officers had an engineering education and a more immediate review indicates that at least 40 railroad officers holding positions as chairmen of the board, president, vice-president and other chief executive offices have come from among the engineers. There are at present between 15 and 20 railroad presidents and chairmen of boards who have had engineering training.

Essential Qualifications

It may be of interest to you to learn something of the requirements for which railroad officers look in engaging men and perhaps more particularly in the considerations when they come to advance them for promotion to positions of substantial responsibility.

It must be remembered that a technical education or any other education can be only one factor in determining a man's success. The boy from the engineering school will frequently find himself in competition with boys who have had to battle their way from a high school education or possibly less. Within the last six months I have discussed at length with our chief engineering and maintenance officers the factors that go to make up a man's success and have given consideration to some possible rating plan in judging these characteristics, although no rating system can be a substitute for immediate knowledge of the man. It may seem easy to state just what these characteristics may be, but an attempt at careful analysis is something different.

After much study it seems to my close associates and to me that the characteristics of these men may be divided into three broad groups—executive and administrative; professional ability and personal considerations, with a number of subdivisions which time does not permit me to discuss.

We have had a great deal of discussion whether, under the head of professional ability, the qualification of technical ability rather than technical education should prevail and possibly, when considering a man at the end of ten or twenty years, the fact that he had a technical education should be completely subservient to the fact that he is technically capable, regardless of how he has acquired his knowledge. This expression of thought even came from several men with engineering education. Personally I do not think that there can be any complete substitute for a technical education, although in any analysis of rating characteristics it may show an importance of 10 per cent or less. I have great faith in the education of an engineer as a means of developing powers of analysis and orderly thinking.

It would seem that the universities should plan their work so as to take full cognizance of the fact that a technical education is not the sole key to success in any industry. Many a poor lad is educated beyond his intelligence and cannot begin to compete with a boy who has started without the benefit of an education but who has applied himself with a superabundance of the other natural characteristics which go to make a successful man in any walk of life.

Educational Needs

The only approach which can be made is to consider two men with the same native characteristics, thus starting with a common premise. In such a case, the man with a technical education should have a substantial advantage, at least for the first ten or fifteen years and it should accrue throughout his career. The education of a sensible and ambitious man ends only with life itself.

In anticipation of this meeting I have discussed the educational needs of men for railroad service with about

a dozen of our principal officers in the engineering, maintenance of way, and electrical and mechanical departments. We cannot presume to tell you how this best can be developed—all we can do is to endeavor to co-operate with you in the hope that we may be of at least minor assistance in considering the problem.

Most of our men incline toward the idea of a four-year course for engineers and toward a longer course only if it is so closely identified with actual training in industry as practically to constitute a year or more of experience. That statement, of course, would not include specialists who are candidates for advanced degrees.

Spending Vacations Profitably

Most of us believe that the universities should earnestly endeavor to place their men to advantage in the summer vacation period. Boys taking engineering courses should be given to understand that they are there for a serious purpose and if they go to college merely seeking four years of easy life they had better take another course. We likewise believe that their vacation periods should be utilized for the advancement of their education through practical channels.

Many of our men believe that university graduates are sadly lacking in their powers of expression and their ability to use the English language in order to present a report concisely and efficiently. This is probably and primarily a deficiency in pre-college training. It also seems that there are too many boys who enter college without any definite ideas as to what they want. Furthermore there are too many who might better become mechanics and get into active service rather than go to college. However, it seems as though that might better be a function of improved vocational training in the preparatory or high schools.

The education of an engineer for the railroads should not only include training along the basic and well established principles but should include education along broad comprehensive transportation lines, with consideration given to organization work, the general principles of operation, economics, management, accounting, finance and at least general consideration of competing agencies.

Training Engineering Prospects

The railroads have given more consideration to the employment of engineering students than many of the university men believe. A number of roads, including my own, have had apprenticeship courses coming under the jurisdiction of the equipment department.

In 1941, the New York Central embarked on a plan to engage engineering students for the summer vacation period, preferably beginning with the sophomore year but even extending it to the vacation period at the end of the freshman year. For several years we employed from 50 to 75 of these boys from about 30 different institutions.

The war, unfortunately, put an end to any such activity. Unless some other plan is presented meanwhile, it is my idea that some such program should be revived at the conclusion of the war. Many other roads have adopted plans for training engineering prospects that are fully as effective and possibly more so than the New York Central.

I have discussed the question of co-operative education with many of my associates among the executive officers and they all seem much interested in the development of a proper plan. It would seem that there is opportunity for co-operation with the railroads in the training of men for not only the engineering, maintenance of way and equipment departments, but also for operation; possibly there is opportunity also for co-operation between the business schools and the traffic and accounting departments.

On the other hand, one difficulty may be that too many schools will be thus engaged, just as there is probably too much transportation of all kinds in this country. Wasteful, inefficient competition in education of that sort should be considered and reduced to a minimum.

The question also arises as to what assurance can be given against unemployment. In that connection, I am afraid that after graduation the boys from the engineering schools will have to take their chances with the rest of the organization. There would be nothing more fatal to their position in any organization than to set them apart as privileged characters, entirely immune from the vicissitudes of financial difficulty. On the other hand, I cannot imagine any railroad officer releasing a brilliant prospect without a struggle.

For any co-operative course to be effective, the railroads might have to make some arrangement with the colleges so that a boy who starts on his course in co-operative education can be assured that he will be able to complete it; however, after he graduates he will have to rely on his own personal ability to hold his place in the sun.

Army-Navy Forwarding

(*Continued from page 305*)

by the railroads under the provisions of section 22 of the Interstate Commerce Act. The rates thus made are said to approximate the average of the bracket rates formerly paid, but they do eliminate the need for loading like-rated freight into the same car. However, these section 22 quotations have been available only since last April; and they do not yet apply on all routes over which shipments are forwarded.

In order to distribute the traffic equitably among different railroads while at the same time retaining the advantages of block routing, the routing is rotated every two weeks. Under this plan a consolidating station often tenders as many as 40 cars in a block to form the nucleus of a train. A major advantage of the whole set-up is the machinery it provides for tracing shipments. Formerly, T. C. D. found it impossible to trace Army l.c.l. shipments. Now there is centralized control to maintain uniform procedure, T. C. D. controlling the routing of all consolidated cars between stations.

T. C. D.'s record in utilizing empty refrigerator cars is indicated by figures showing that between January 1, 1943, and June 30, 1944, its stations shipped to California and Utah (the two states to which the empty reefers were being returned) a total of 34,000 cars to which 15,000 were reefers which would otherwise have moved empty. It is estimated that this resulted in a saving of about 6,000 box cars which would normally have had at least a partial empty movement on their return to the East.

That the record is getting progressively better is indicated by comparative figures for January and June of this year. In the former month there were 803 reefers among the 2,100 cars sent to California and Utah points; in June there were 2,123 reefers out of a total of 3,211 cars. Meanwhile, it has been estimated that if the consolidated freight were moving in l.c.l. service it would require double the number of cars now used for it.

Booster Test Plant with Condenser in Foreground, Crank-Shaft End of Booster in Middle Distance, and Dynamometer at Rear

Dynamometer Test Plant Results on the Type E Booster

High-speed machine operates up to 35 m. p. h. — Steam consumption averages between 19 and 20 lb. per i. hp.-hr.

IN steam locomotive operation the need for auxiliary power at critical moments was long recognized and led to the development and application of the Locomotive Booster, which provides additional drawbar pull not only for starting, but also for negotiating heavy grades and meeting other intermittent demands which require auxiliary locomotive drawbar pull.

Several thousand Locomotive Boosters have been applied to locomotives on many roads so that supplementary power would be available to meet the operating requirements. These applications have been made to freight, passenger and switching types of locomotives and the Franklin Locomotive Booster has made it possible to handle heavier trains.

In recent years there have been definite changes in locomotive design, operation and performance to meet the requirements of improved train performance. In keeping with the trend to higher pressures, which in some cases reach 350 lb. per sq. in., and the necessity for faster operation between terminals, the Franklin Railway Supply Company, New York, has developed the Type E Booster which is especially adapted to the new operating conditions.

The trend toward higher steam pressures in modern locomotives has been followed in the booster design. All parts are suitable for boiler pressures up to 350 lb. per sq. in.

The cylinders are of cast steel and incorporate liberal steam and exhaust passages arranged for smooth steam flow. The inlet and exhaust apertures are arranged for direct application of the ball joints which connect the flexible pipe lines. The steam inlet is 3½ in. in diameter and the exhaust outlet is 4 in. These features give ample steam supply for high speeds and keep the back pressure low. High-grade cast-iron bushings are provided for barrel and steam chest.

Pistons are of cast steel equipped with sectional piston packing. Their maximum diameter is 10¾ in. This

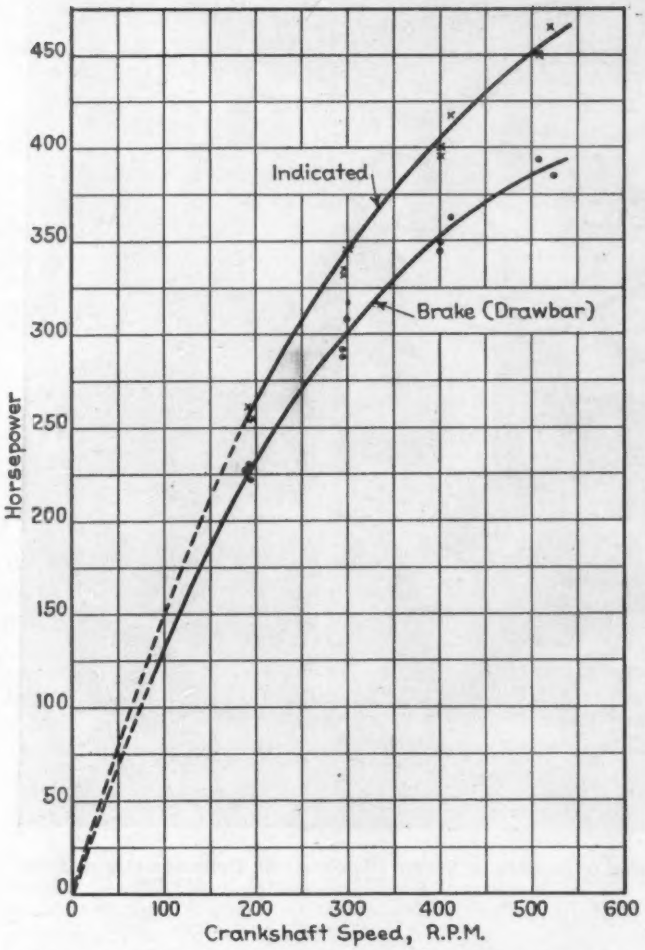


Fig. 1—Indicated and Brake Horsepower of the Type E Booster in Relation to Crank-Shaft Speed

can be reduced to 10 in. by changing the inside diameter of the bushings. The piston stroke is 12 in. Piston rods are of forged steel, fitted with metallic packing and swab glands. Crossheads are of cast steel with bronze-lined shoes working in replaceable steel guides.

Connecting rods are of I-section, drop-forged from high-tensile steel. Steel-backed babbitt-lined bearings are applied to the crank-pin end and special thin-wall bushings to the crosshead end.

The valves are of the balanced piston type with L-rings. Port areas are ample. Valve stems have metallic packing and swab blands. The valve gear is of the fixed-cut-off type, simply operated by return cranks spline-connected to the crank pins and transferring motion to the valve stems through drop-forged eccentric rods and transfer rockers. For economy, the nominal cut-off is 35 per cent.

The crankshaft is of special steel, heat treated to obtain more than 200,000 lb. per sq. in. tensile strength. The driving pinion is cut integrally upon it. Large self-aligning roller bearings reduce friction and maintenance and allow ample room for balance weights. The crank arms are of cast steel with integral crank pins which are fitted with hardened bushings. The entire assembly is well balanced for smooth running.

The frame is of the bed type, made as a one-piece steel casting. It has continuous longitudinal members of heavy section, arranged in line with each of the main bearings. The crank case is made oil-tight so that splash lubrication is available for all moving parts. The center section of the bed carries the idler-gear rocker pivot as well as the point of support on the truck frame. Removable cover plates protect from dirt and afford ready access for inspection and adjustment.

Booster starting is always at maximum power; there are auxiliary steam ports to overcome the disadvantageous piston positions which may occur with short cut-off valve gears.

There is considerable variation in boiler pressure, weight on trailer axle and diameter of trailing wheels. To provide for these in booster application, the Type E is so arranged that selection may be made from three gear ratios: 2 to 1, 2.25 to 1, and 2.71 to 1. Thus, through the use of different gear ratios and cylinder diameters there is sufficient power flexibility so that this type of booster can be adapted to produce optimum results on any type of locomotive without basic change in the engine proportions. All gears are of ample strength for engagement at speed. An increase of approximately 50 per cent in crank-shaft speed over previous designs allows the Type E to be run at higher locomotive speeds.

For higher cut-in speeds it is necessary to increase the steam supply, at the same time maintaining proper control of idling speed. This is accomplished by the use of a supplementary steam valve in addition to the usual preliminary throttle valve. Both valves take their steam supply from the turret. For idling the preliminary valve alone supplies through its choke sufficient steam, while the supplementary valve remains ineffective. When the booster is cut in, both the preliminary and the supplementary valves are opened. The greater steam supply furnished by the two valves in combination insures sufficient booster speed for engagement when the locomotive is moving at speeds up to the maximum en-

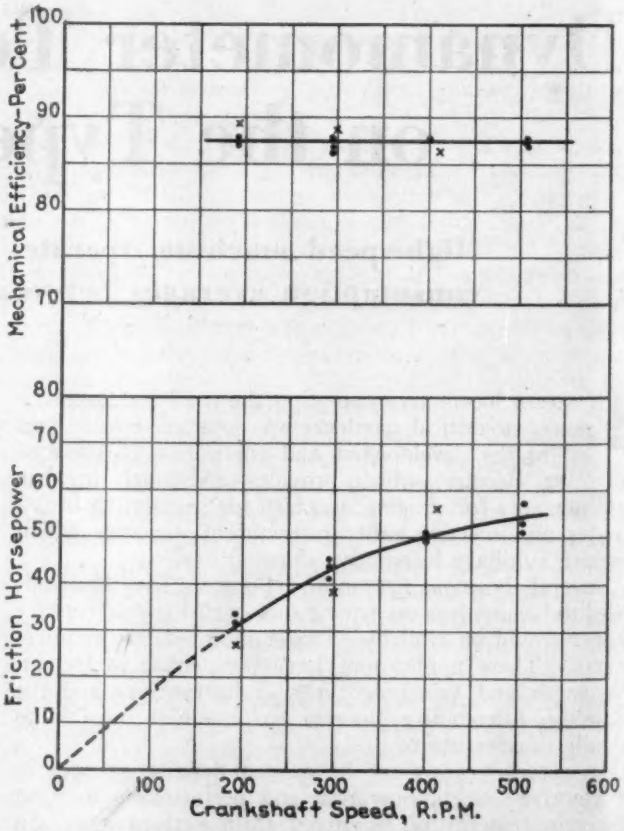


Fig. 2—The Mechanical Efficiency and Friction Horsepower of the Type E Booster in Relation to Booster Crank-Shaft Speed

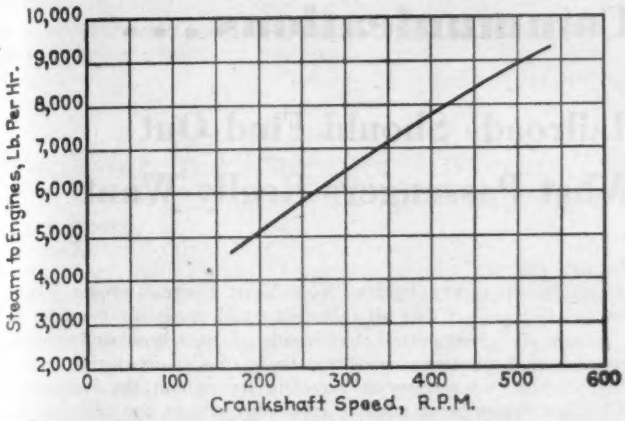


Fig. 3—Hourly Steam Consumption of the Type E Booster Engine in Relation to Crank-Shaft Speed

gaging limit (15 to 22 m.p.h., depending upon wheel diameter and booster gear ration). The booster may remain engaged and is capable of doing useful work at speeds up to 30 to 35 m.p.h.

Tests of the Type E Booster

Exhaustive dynamometer tests have been made with the Type E booster, covering all features of operation and under conditions simulating as nearly as possible the actual locomotive application. For these tests, live steam and exhaust piping as well as operating air supply lines were assembled in length and volume corresponding to an existing and typical 4-8-4 locomotive installation. The engine was supplied with superheated steam and inlet pressures and temperatures were closely controlled.

The delivered power was measured by an Alden dynamometer; all speeds were carefully controlled. Simultaneously, indicator cards were recorded. Temperature records were obtained for inlet and exhaust steam at the cylinder passages and in the pipe lines, a centrally located potentiometer being employed.

To determine the steam consumption, the exhaust was passed through a condenser and the condensate was weighed. In order to insure water-rate readings which would be truly representative of road conditions, each test was first run exhausting to the atmosphere. The pressure readings in the exhaust lines were noted. A duplicate run was then made exhausting through the condenser and the exhaust line was throttle down so that the back pressure at the booster cylinder was the same as when exhausting to atmosphere. Thus, the condenser served only to trap the exhaust steam for weighing and did not affect the engine performance.

The tests were run at crankshaft speeds varying from 50 to 600 r.p.m. The total running time was 110 hours, corresponding to approximately 2,500 miles with a 45-in. trailer wheel. Of these runs, 85 per cent were at speeds between 300 and 600 r.p.m. Several tests were made which required continuous booster operation for 4½ to 5 hours. The long continuous tests showed that this booster can be operated satisfactorily for extended periods of time.

The test results for the indicated and brake horsepower are shown in Fig. 1. It will be seen that the horsepowers continually increase over the speed range. While the brake horsepower tends to flatten out at the higher speed, the indicated horsepower continually rises. These data are representative of the booster operation when the pressure at the booster throttle is maintained at 195 to 200 lb. per sq. in. and the steam temperature at 540 deg. F.

The difference between the indicated and brake horsepower is the friction horsepower. The increase in the indicated horsepower gave a proportionate increase in the friction horsepower. In other words, there is apparently a very definite relation between the mean effective pressures and the friction horsepower. These data are shown in relation to the booster speed in Fig. 2. The mechanical efficiency of the booster is shown in the upper portion of the chart. Throughout the test range of indicated horsepower and speed, the mechanical efficiency is approximately constant at 87.5 per cent.

The Type E booster proved to be very economical in performance over the entire speed range. On Fig. 3 is shown the total steam supplied to the booster per hour compared to the crankshaft speed. The maximum requirement for the booster was 9,010 lb. per hour and this occurred at 508 r.p.m. when the maximum horsepower was being produced.

The steam rates per indicated and per brake horsepower are compared to the developed brake horsepower in Fig. 4. These data show that the minimum water rates are obtained when the booster is producing about 300 brake horsepower and the average minimum water rate is 19.1 lb. per i.hp.hr. and 22.2 lb. per h.hp.-hr. The table gives the performance for maximum indicated horsepower and maximum economy.

Performance at Maximum Power Output and Maximum Economy

	Maximum i.hp.	Maximum economy
Speed, r.p.m.	508	400
Inlet steam temperature, deg. F.	545	551
Exhaust steam temperature, deg. F.	268	268
Inlet pressure, lb. per sq. in.	181	184
Exhaust pressure, lb. per sq. in.	11.2	10.2
Steam to booster, lb. per hr.	9,010	7,580
Indicated horsepower	449.7	399.3
Steam rate, lb. per i.hp.-hr.	20.0	19.0
Brake horsepower	392	349.5
Steam rate, lb. per b.hp.-hr.	23.0	21.7
Mechanical efficiency	87.2	87.5

The water rates for the booster, plotted against locomotive speed for the three standard gear ratios applied to 45-in. trailing wheels, are shown in Fig. 5. These rates are shown for a boiler pressure of 205 lb. per sq. in. and temperature of 600 deg. F. For comparison the water-rate curve of a conventional locomotive of similar characteristics and with 70-in. drivers is shown. This

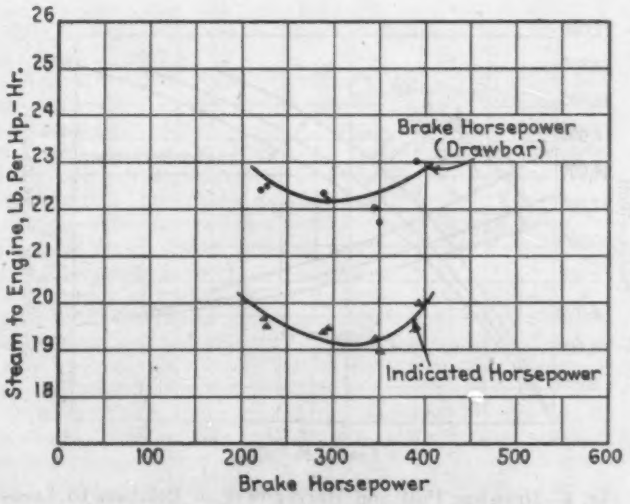


Fig. 4—Water Rates of the Type E Booster Obtained During the Laboratory Tests

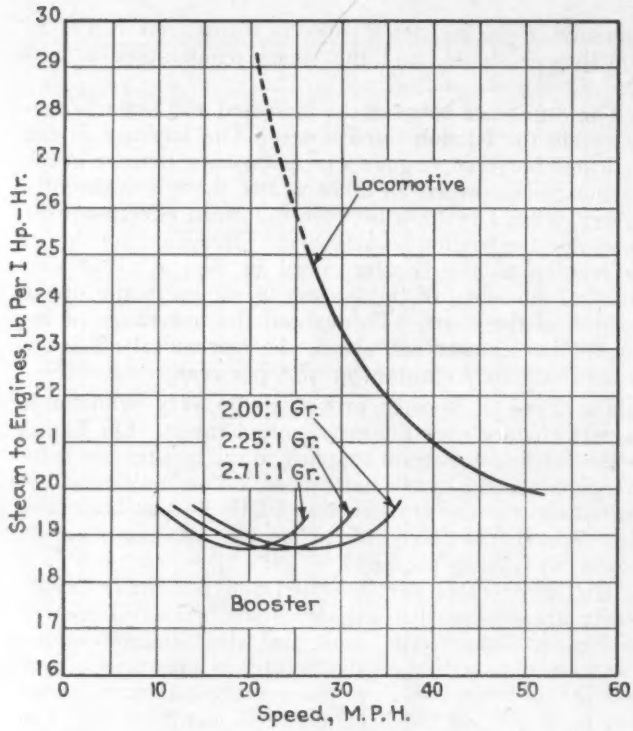


Fig. 5—A Comparison of the Steam Rates of the Type E Booster with Those of a Locomotive—Boiler Pressure 205 Lb. Per Sq. In.; Steam Temperature 600 Deg. F.

is existing relation for one locomotive. An alteration in the temperature and pressure conditions will affect locomotive and booster performance alike and the relative improvement with the relationship will be approximately the same. In all instances, within the booster speed range the booster water rates are very much less than those of the locomotive.

The power which is produced by the Type E booster applied to a locomotive with 270 lb. boiler pressure and having 44-in. trailer wheels is shown in Fig. 6. The drawbar pull and drawbar horsepower are shown for the three standard gear ratios. The 2.71 to 1 gear ratio gives the greatest power, but, of course, the speed range is less than can be obtained with the other gear ratios.

The test showed that this engine is capable of producing a horsepower for each 15 lb. of booster engine weight.

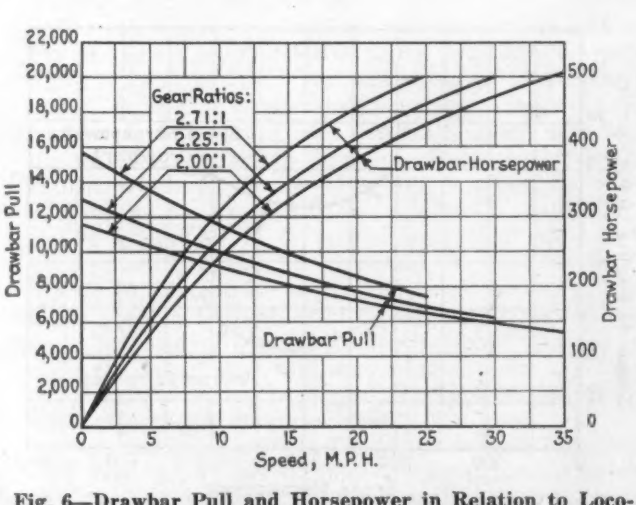


Fig. 6—Drawbar Pull and Horsepower in Relation to Locomotive Speed at Three Gear Ratios with a 44-In. Trailer Wheel—Boiler Pressure 270 Lb. Per Sq. In.

Communications . . .

Railroads Should Find Out What Passengers Really Want

CHICAGO

TO THE EDITOR:

The recent survey by the New York Central among 5,000 patrons is an effort that all railroads could profitably emulate.

I am a strong supporter of railroads. I have been well served by most of the nation's roads and those of Canada during more than 25 years of continuous traveling throughout the continent. All other things being equal I invariably choose the railroad in preference to any other form of transport. My admiration does not blind me to the fact that a century of insular conservatism is likely to prove a handicap to the roads in the post-war era of business.

Competition from trucks, buses, airplanes, and private automobiles will be fierce. Anyone who believes the contrary is not familiar with the mental trends of today's travelers. Railroad men talk glibly of lightweight streamlined trains that will maintain fast schedules. These trains will be cool, clean, and comfortable and the rates will be low. Unfortunately the solution of the problem is not as simple as all that.

The Sample Hasn't Been Attractive

Millions of people have taken their first long railroad trips during 1942-1944. They have no recollection of clean, fast, comfortable trains in which a man could relax with dignity. They never traveled extensively prior to the war. They do not know that railroad men can be pleasant and human in their customer contacts. Instead, millions of one-time travelers will emerge from the war period with a memory of travel that was a veritable nightmare: jam-packed terminals; inefficient ticket sellers who frequently assign the same space to two or more passengers; insolent or missing redcaps; crowded trains; nervous, harried trainmen; completely inadequate dining car service; slow train schedules impossible to maintain.

Be assured that millions of potential travelers who could be weaned away from their automobiles or airplanes will have only a horrible memory of the few train rides they took during wartime.

Justly or unjustly they will blame the roads. There will be an association of unpleasant ideas in their minds that will tend to make them look elsewhere for transportation.

Since Commodore Vanderbilt's alleged remark about the "public," railroads have been slow to conform their policies to expressed public likes and dislikes. Often the public is unreasonable, but in normal times the man who has the money for a ticket is under no compulsion to buy it from a railroad if there are two or three other better advertised means at his disposal and which appeal to him more.

Opinion Research Can Give the Answers

Every road should be making surveys of public opinion and laying plans for the future. In this connection I should like to mention that moot point—radio reception aboard train. Based on surveys I have made, I estimate that not more than 50 per cent of the passengers want public radio reception. Unfortunately there is no middle ground. The other half cannot shut their ears; they must sit under a barrage of sound which they cannot escape. This is not fair; it is not a 50-50 proposition. Either a "radio car" should be provided or individual ear phones made available.

Smoking throughout the train which is now common is objectionable to as many men as it is to women and to smokers as well as non-smokers. I smoke moderately, but in a Pullman car, which is my bedroom, I do not like the strong smell of exhaled tobacco smoke. Many men feel likewise. Some more equitable provision must be made for men and women smokers and the rules enforced.

There are many controversial topics in connection with train

travel which could well be explored during this wartime period. Answers and opinions from first-time trippers would be as enlightening as those from veteran travelers.

R. S. WILLIAMS.

Smoking in Passenger Coaches

BUFFALO, N. Y.

TO THE EDITOR:

As a railroad "enthusiast" who is interested in both the life-size and the model railroad; and who prefers to travel by rail, I was interested in the article, Passenger Car Design Trends, by Allen Clarke, in the June 10 issue of *Railway Age*. I was particularly interested in his predictions as to changes in design of coaches, but was sorry to see the statement, "It is expected that smoking will be permitted in the main body of the car by the majority of railroads, this practice having become more and more prevalent with the advent of air conditioning. Hence, the washroom will no longer need to double as a smoking room."

Even with the advent of air conditioning, many trains operate with non-air-conditioned smokers of older vintage than the air-conditioned cars, which is probably one reason why those who smoke do not care to use them. And with the present-day traffic, trainmen probably feel it is useless to expect people to move from a non-smoking to a smoking car, when all are crowded, so they smoke in all the cars.

Considering that there are probably just as many travelers who smoke as who do not, would there not be some merit in planning future trains to designate every other coach as a smoker, rather than just the combination car at the head end? On trains carrying a number of cars this might be accomplished, and it should make a hit with the non-smokers, of whom I happen to be one. I have no prejudice against smoking, but it does become annoying to have to sit for one or two hundred miles in front of a man or woman who vigorously blows clouds of smoke around my head; and no air-conditioning equipment will overcome that nuisance. Moreover, there are some people who are allergic to large amounts of smoke. So let's hope that the planners and designers of future trains and those who will operate them when more normal conditions prevail, will give the non-smokers a break, too.

MORRIS H. LLOYD

Mistreated Equity-Holders

PASADENA

TO THE EDITOR:

I wish to congratulate you on your editorial "Confiscatory Plans of Reorganization," in your June 17 issue, page 1147. If the public were aware of the high-handed highway robbery that is being perpetrated upon the "bankrupt railroads," it would rise up in its wrath and demand that legislation be passed, such as the pending Hobbs bill to prevent the Interstate Commerce Commission from carrying out its scheme to deprive the stockholders of some one and one-half billions of equity (not hundreds of millions as you state in your article), without due process of law. How can any Court of our land countenance such flagrant violation of the law as is being done one after another in the plans for the reorganization of the railroads in bankruptcy?

I am enclosing a copy of my protest in the Rock Island reorganization, on behalf of the employee stockholders' committee against the Commission's plan of May 1, 1944, which wipes out 129 millions of stock, simply upon the statement of the Commission that "the stock has no value." Their conclusion is based upon the earnings during the lowest of the depression years, and entirely ignores past and future earnings of the property which the law requires it to consider. Over a period of 24 years, as shown in the protest, the Rock Island earned a surplus of 30 millions over fixed charges on the present capitalization. How can the Commission say therefore that the stock has no value? It is a false statement not borne out by the facts and the law, and the Court cannot accept it without proof.

The Commission is itself directly responsible for the bankruptcy of Class I railroads by reason of its failure to obey the mandate of Congress laid own in the Transportation Act of 1920, which directed that the Commission should see to it that the railroads were allowed to earn a fair return on their investment devoted to the public use. The starvation rates which were in effect from 1920 to 1933 is the direct cause of the bankruptcy of 30 per cent of our railroads, and now the Commission executes the "coup de grace," by executing the stockholders and taking their property from them. It is no different from the acts of Jesse James and his gang in holding up passengers and robbing them of their property, only this time the passengers are the stockholders of the railroads. *There would have been no bankruptcies of the railroads if the Commission had lived up to the law as expressed in the Transportation Act of 1920.*

Surely under our Constitution there must be some protection to the honest investor in railroad securities, and if there is not what is to become of the credit of the carriers?

L. C. FRITCH

A Central Laboratory?

FLORIDA

TO THE EDITOR:

I note that Director Clyde Williams of the Battelle Memorial Institute has been engaged as technical consultant to advise the A. A. R. on research matters. It is high time for our railroads to give serious thought to the matter of intensive research. I have had contact with "up to the minute" industrial concerns and had the opportunity of learning what they have accomplished in a relatively few years by means of well-directed and intensive research. Our railroads, taken together, with more money invested than all the concerns I have been in contact with, as far as I have been able to ascertain, have taken little advantage of serious research to help them solve their many highly important problems.

Why don't our railroads get together and build a complete research laboratory at Chicago because of its central location and also because many of the most important lines have their operating headquarters there, and put a competent man in charge and hold him responsible for results?

Distribute the cost of the operation of such an institution on a miles-operated basis and the cost to each railroad would be small indeed. Best of all—the men to staff such an institution are readily available on the railroads themselves, most of them now struggling along as best they can with poorly-equipped facilities and no one much to lead, help or encourage them.

RETIRED MANUFACTURER.

New Book . . .

Trains, Tracks and Travel, by T. W. Van Metre. 417 pages. 9 in. by 6 in. Bound in cloth. Published by Simmons-Boardman Publishing Corporation, New York. Price $3.50.

The sixth edition of this well-known and popular book on railroads, written primarily for boys but enjoyed by their fathers as well, has been enlarged and brought up to date. The first two chapters have been rewritten, new information added to others, and a new chapter on "How Our Railroads Went to War" has been added.

The reader's knowledge of railroads and railroading is built up step by step, so that by the time he has completed the book he has a clear picture of our railroads and the multitudinous operations necessary to keep them running. The development of the railroads, beginning with the early "horse power" railroads, is outlined. Then follow detailed descriptions of the railroad track, the steam locomotive, electric locomotives, freight cars and passenger cars. Other chapters describe the modern streamliners, passenger stations and terminals, freight terminals, and the operation of trains. The new chapter on the railroads' war effort tells of the greatly increased traffic, both freight and passenger (civilian and military) that the railroads have had to carry and how they have "carried on" when other means of transportation became less available.

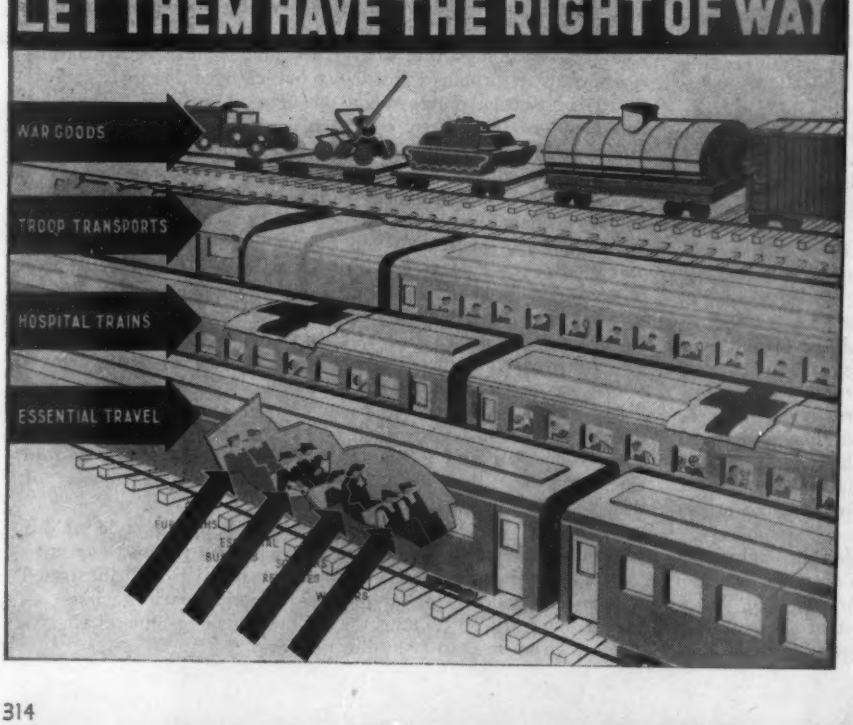
Professor Van Metre retains the simplicity of style of his previous editions and one does not have to be a railroad expert to understand this book, or to enjoy reading it. It is well-illustrated with modern and historical pictures depicting various phases of railroading. It also contains the car heralds or insignia of Class I roads with more than 500 miles of track.

Railroads-in-War News

No-Travel Resolution Suggested by O. D. T.

Urges public to take pledge to avoid trips which are non-essential

The Office of Defense Transportation, in its campaign to preserve transportation for the war effort, has suggested a pledge for the public and has visualized the transportation situation by a drawing entitled, Let Them Have the Right of Way. The pledge reads: "I pledge as a patriotic citizen, to submit to this imperative order of the day, so that my country shall win in its all out war effort with our enemies. I know that anything I might do against this effort might change the successes we have had and may delay the return of my loved ones from bloody victories on foreign fields. 1. I will spend an 'At Home' vacation and engage in no non-essential travel! 2. I will help leave the transportation lines open for troops and military supplies, so that all schedules at docks and wharves may be met on time! 3. I will stay close to the job and help in every way to meet the production schedules of my plant and department! 4. I will work, conserve materials and time, buy war bonds and save for a real vacation when victory comes! 5. I will hold the line—hold all transportation lines open to the war effort!"



Wants Another Inquiry Into Grain Car Shortages

Remarking that he had been receiving a great many telegrams that disclose that wheat growers in the Northwest are encountering the "same situation which was faced last year" with respect to a shortage of cars to handle grain in that territory, Senator Langer, Republican of North Dakota, on August 15 introduced Senate Resolution 321, directing the Senate committee on interstate commerce, or a subcommittee thereof, to investigate "the causes of the existing shortages of railroad cars for the transportation of wheat, flax, oats, barley, rye, and other grains in the states of North Dakota and Texas, and means of relieving such shortage."

The resolution, which directs the committee to report the results of its investigation promptly, together with its recommendations, was referred to the committee on interstate commerce, although Senator Langer, in introducing it, had asked that it be referred directly to the subcommittee of that committee of which Senator Stewart, Democrat of Tennessee, is chairman, and to which a similar resolution (S. Res. 185) was referred last year. In the absence of the committee's chairman, Senator Wheeler, Senator Hill of Alabama expressed the opinion that the resolution would be referred in due course to the subcommittee. Mr. Langer remarked that the Northwest "got results" from Senator Stewart's subcommittee last year.

O. D. T. Takes Over Midwest Truckers

Strike ends when government puts wage increase into effect on 103 lines

The Office of Defense Transportation, acting under an Executive Order issued by President Roosevelt the previous day, took nominal possession of 103 midwestern trucking firms at 12:01 a. m. August 12. Ellis T. Longenecker, chief of the for-hire carrier section of the O. D. T. Highway Transport Department, was named federal manager of the affected companies by O. D. T. Director Johnson, and immediately set up headquarters in Minneapolis, Minn.

This action followed advice to the President by William H. Davis, chairman of the National War Labor Board, that a "labor disturbance" threatening to interrupt the flow of goods essential to the prosecution of the war had resulted from "the failure of 103 members of the Midwest Operators' Association to comply" with the provisions of a W. L. B. "directive order," approved by the Director of Economic Stabilization, increasing the wages of these truckers' employees. According to the W. L. B., about 70 per cent of the 4,720,000 annual tonnage handled by these carriers can be classified as immediately related to the war effort.

Lines Affected—The truck lines affected operate mainly in Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Kansas, Missouri, Oklahoma and Wisconsin. For almost a week prior to their seizure by the O. D. T. their operations had been "seriously curtailed," according to the O. D. T., due to a strike of drivers, helpers, and other employees which was precipitated by the refusal of the companies to make the wage increases ordered by the W. L. B. effective.

Colonel Johnson said that as each operating company complied with the W. L. B. order it would be returned to private operation. In the meantime, he added, the O. D. T. will operate them in the most efficient manner possible, consistent with military and essential civilian requirements. The employees will receive the wage increase of seven cents per hour granted them by the W. L. B., effective from the assumption of control of the companies by the government, but the retroactive pay from November, 1943, awarded them under the W. L. B. directive, will be paid only out of the future net operating revenues of each company.

Plead Inability to Pay—A spokesman for the truckers was quoted as saying they were not paying the wage increase "simply

British Combine Photo

Landing Railroad Equipment Over a Beach in Normandy

* * * *

because they cannot." The operating ratios for June for the Northwest and Middlewest regions, parts of which were included in the strike, were 99.5 and 98.6, respectively, according to this source, which was further quoted as saying that the W. L. B. had ordered the wage increase of about 8½ per cent in spite of authoritative warnings that the companies could not absorb it, stating in that respect that "ability to pay" was not a consideration in the proceedings.

The employees on strike were represented by the International Brotherhood of Teamsters and the Central States Drivers' Council. Upon receipt of news that the government had undertaken operation of the companies union leaders were reported to have advised the men to return to work promptly, and operations were said to be approaching normal early this week.

W. P. B. Cuts Monthly Reports

Filing of monthly shipping schedule reports on most so-called critical railroad components has been eliminated by the War Production Board, it was announced August 14. Reporting forms still must be filed by manufacturers on locomotive and tender beds, clasp brakes, frames, live steam injectors, and mechanical lubrication equipment. Shipping schedules filed with the W. P. B. prior to August 14 will be unaffected.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since August 8, which are of interest to railways:

Asphalt and Tarred Roofing—The term "finished weight" as applied to asphalt and tarred roofing products and asphalt shingles is defined and certain specification changes are made in permitted production of these products in Order L-228 as amended on August 11. "Finished weight" is defined as the weight that must be used by the manufacturer as his standard in the manufacture of an item for which finished weight specifications are given in Schedule A. Tolerances, if permitted, provide only for uncontrollable manufacturing variations. In other words, the manufacturer must aim at the specified finished weight in setting up his production facilities. A variation within the allowable tolerance will not be a violation, if it is the result of uncontrollable manufacturing variations, the order states.

The chief specification changes are: (1) Three sizes of rolls of saturated felt built-up roofing may be made instead of two. This change was made to meet a demand on the West Coast for a lighter roll (three squares), better adapted to the method of application used there. (One square is equivalent to 100 square feet of roof area). (2) Mineral-surfaced roofing—17" or 19" selvage edge—may now be made in two finished weights instead of one.

Construction Equipment—One restriction governing the manufacture of 10 kinds of construction equipment has been removed, under amendments to 10 schedules of Order L-217. Manufacturers are permitted to produce the types of the 10 kinds of construction equipment specified in the schedules, even though they were not producing these types before the dates established in the schedules when originally issued. Manufacture is still limited to the specifications of the schedules and is subject to Order L-192, which controls production and distribution of construction machinery and equipment.

The amended schedules, with dates of original issue, include: Schedule II—portable jaw and roll crushers, January, 1943; V—portable construction concrete mixers, February, 1943; VII—pumps, February, 1943; IX—tank car heaters and pumping boosters or circulators, April, 1943; X—bituminous paving finishers, April, 1943; XII—bituminous heating kettles, April, 1943; XIII—bituminous materials maintenance units, April, 1943; and XV—asphalt surface heaters, April, 1943.

More About "Construction"—Inclusion of the definition of "construction" in Interpretation 3 to CMPR 9A has been made in order to eliminate confusion among contractors and repairmen. The interpretation included the sentence, "Construction is defined in L-41" (Construction Order), but did not provide the definition. This sentence has been deleted and the following complete definition substituted: "Construction means the putting up, altering or repairing of any sort of structure including a building, road, bridge, dam, sewer and similar jobs. It also includes the installation of equipment or fixtures in such a structure." The definition as included in the amended interpretation makes it clear that "construction" includes "repairs," W. P. B. officials said.

Refrigeration Equipment—Repair and replacement parts for commercial refrigeration equipment and materials or finished goods sold to a supplier under PR-13 are exempt from Suppliers' Inventory Limitation Order L-63. By amendment, L-63 includes the above items in List A, which specifies goods not defined as "supplies" within the meaning of the order. L-63, in force for more than a year, established supplier inventory controls for such items as electrical supplies, hardware supplies, automotive supplies, plumbing and heating supplies, restaurant supplies.

U. S. Government Manual—The summer 1944 edition of the United States Government Manual, the official handbook of the Federal Government, which includes the latest data on Government agencies and revised information on all departments, agencies and the branches, will be available for distribution after September 21. Quantities are being limited because of the paper shortage, and orders are being solicited in advance of the publication date so that requirements may be covered. Orders may be placed, at $1 a copy, with the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Prices

Asphalt and Tarred Roofing—Manufacturers' present ceiling prices for all asphalt and tarred roofing products sold in states east of and including Montana, Wyoming, Colorado, and New Mexico, may be increased by 3 per cent after August 17, under Amendment 4 to RPS-45. Resellers of the products may pass on actual dollars-and-cents increases resulting to them from the adjusted manufacturers' prices.

Douglas Fir—Several changes in the regulation covering mill prices for Douglas fir and other West Coast lumber, including the pricing of various items not listed in the regulation, are provided in Amendment No. 9 to RMPR-26, effective August 14. This action makes the prices in this field uniform and applicable to all mills. Previously, they had been given to mills on an individual basis. No change is made in the price level. Typical of the items for which prices are thus provided are ¾ inch common and clear boards and additional grades of casing and base. The meaning of the term "f. o. b." as applied to mills operating under various transportation conditions has been more clearly defined. This term had been subject to varying interpretations by industry. Another change defines the use of rough weights and surfacing charges in connection with items that are surfaced on one or two edges only. The definition of "combination grades" has been amended to require them to be loaded and invoiced in a manner to permit identification of grades at the time of unloading.

New O. P. A. Service System—Publication of a new loose-leaf service, replaces the 16-volume service now in use and provides a more simplified method by which O. P. A. officials and hundreds of business executives and attorneys in private practice can keep abreast of O. P. A. orders and regulations. Compared with the Complete O. P. A. service and Price Service now in use, which has grown to 16 bulky volumes of more than 2,000 pages each, the new service will represent a one-third reduction in bulk; annual savings of approximately $100,000 in editorial and publication costs and approximately $120,000 in filing time, together with an estimated saving of 29 tons of paper.

Chief feature of the new service is the arrangement of the subject-matter in such a simplified form that the average user now compelled by the complex codification system of the present service to search through as many as five volumes to check on a price regulation, and obliged to have all 16 volumes available for reference, will need only two volumes.

The burden of keeping loose-leaf service current will be lightened under the new service. At present, the user receives releases twice a week which must be inserted in their appropriate places in all 16 volumes. Under the new service, he will receive releases once a week, and these will deal only with the O. P. A. orders and regulations in the two volumes with which he works.

GENERAL NEWS

C. C. Thompson Quits I. W. C. Presidency

Leaves government barge lines for private industry job—successor not named

Secretary of Commerce Jesse Jones on August 15 announced his acceptance of the resignation of Chester C. Thompson as chairman of the advisory board and president of the Inland Waterways Corporation, effective that date. John S. Powell, vice-president of the I. W. C., has been designated to fill these positions as active chairman and president, pending the selection of a permanent successor to Mr. Thompson. Mr. Powell also has been elected president of the Warrior River Terminal Co., operator of the I. W. C. rail properties, succeeding Mr. Thompson in that position.

Succeeded General Ashburn—Mr. Thompson tendered his resignation to become president of the American Waterways Operators, Inc. He was put in charge of the I. W. C. on November 15, 1939, following the resignation of Major General T. Q. Ashburn, which had been asked for, according to his own statement, following a "constant serious disagreement of policy" as to whether the I. W. C. should "operate as a privately-owned corporation" or become a bureau of the Department of Commerce. As a step in the reorganization of certain agencies of the federal government which was brought about in 1939, the I. W. C. had been transferred from the War Department to the Department of Commerce, where it was put under the direction of Col. J. Monroe Johnson, who was then assistant secretary of commerce. Gen. Ashburn's subsequent resignation from a post he had held for 15 years terminated what was understood at the time to be a continuing lack of agreement over I. W. C. policies between him and the assistant secretary.

Mr. Thompson had served three terms as a member of the House of Representatives prior to his appointment as I. W. C. chairman. He was a resident of Rock Island, Ill., where he was born September 19, 1893, and had been prominent since 1927 in the affairs of the Mississippi Valley Association, and particularly in its activities in vigorous support of the development of so-called inland waterways.

Jones Accepts "With Regret"—In accepting Mr. Thompson's resignation "with regret" Secretary Jones said: "As an administrator and official you have demonstrated marked ability, judgment, enthusiasm, industry and loyalty and your efforts have been rewarded by success, satisfaction and good will. Under your leadership the Inland Waterways Corporation has developed and has attained a place of usefulness that is gratifying to me and must be to you. I regret to lose such a valuable executive.

"You are leaving for a bigger field of responsibility and one that will be even more a challenge to your skills, abilities and best efforts and which will also mean more to you in a personal way. For this opportunity I congratulate you and extend to you my best wishes for success and my sincere personal regards."

Mr. Powell, according to the Department of Commerce announcement, is one of the oldest employees of the I. W. C. in point of service. He was made vice-president of the corporation when that office was created at the time Mr. Thompson was named president, having been comptroller previously.

O. D. T. Rail Statistician Quits

Resignation of Dr. Herbert Ashton as statistical and economic assistant to the director of the Division of Railway Transport of the Office of Defense Transportation, effective August 21, has been announced by O. D. T. Director Johnson. Dr. Ashton leaves the O. D. T. with which he has been connected since February 1, 1942, to engage in transportation research for the Army Industrial College.

Dr. Ashton holds a C.E. degree from Cornell, a Ph.D. from Harvard and has studied in the University of Grenoble, France. He was with the Pennsylvania for ten years as consultant on transporation, and was engaged briefly as transportation consultant for railroads in Argentina. Dr. Ashton came to the O. D. T. from the Interstate Commerce Commission's Bureau of Transportation Economics and Statistics.

July Export Freight

Cars of export freight, excluding coal and grain, handled through United States ports in July totaled 160,444 compared with 130,465 cars in July, 1943, or an increase of 23 per cent, according to the Association of American Railroads. Export grain unloaded at the ports totaled 3,985 cars compared with 4,970 in July, 1943, or a decrease of 20 per cent.

The railroads handled 277 carloads of coastal freight in July, compared with 319 in the same month in 1943, or a decrease of 13 per cent. The total of 164,706 cars of export and coastal freight, excluding coal, handled through the ports in July represented an average daily unloading of 5,313 cars. This was the fifth consecutive month that average daily unloadings have exceeded 5,000 cars.

Biddle-Berge Charges Draw Sharp Replies

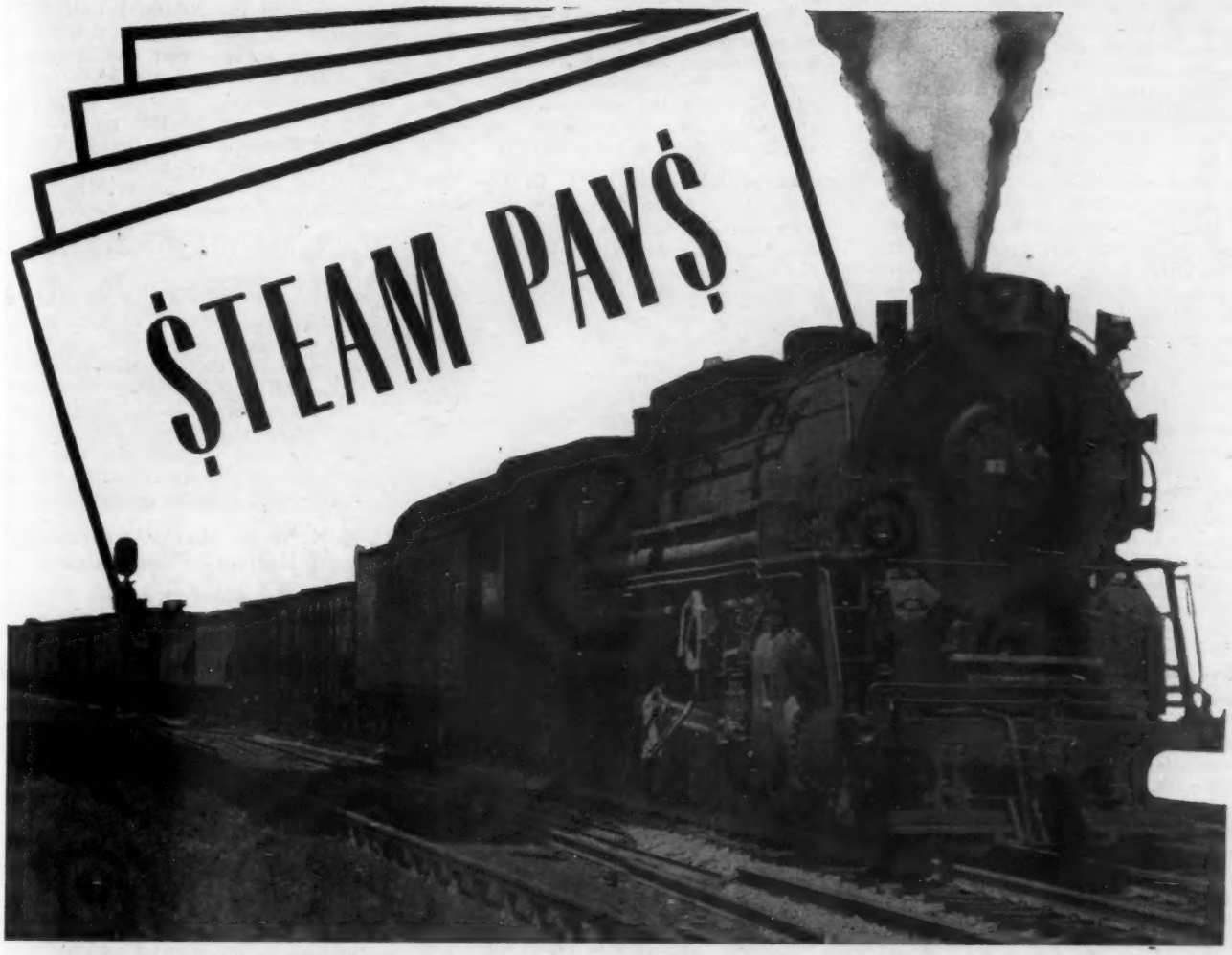
Allegations called demagoguery, or attempt to dictate by perverting Sherman act

Both shippers and railroads this week raised loud protests against the charges made by Assistant Attorney General Berge, at Kansas City, Mo., on August 7, and by Attorney General Biddle at Spokane, Wash., on August 9, charging the railroads with violations of the Sherman anti-trust act. "The attorney general will get little or no help from shippers in his campaign against the railroads," according to a statement made by G. H. Shafer, president of the National Association of Shippers Advisory Boards.

"The operation of the railroads for over fifty years has been under strict supervision of the Interstate Commerce Commission—a federal body in which both the railroads and the shippers of the United States have implicit confidence," Mr. Shafer continued. "Not only have the operating practices been under close supervision by the Commission but their rate-making machinery has even received greater attention by that honorable body. It is difficult to conceive therefore how the attorney general can arrive at the conclusion that the railroads have been 'riding rough shod' over the laws of the United States and have been indulging in the unlawful practices alleged. Is it not strange that these practices have not been discovered before? Certainly no industry has measured up to its wartime responsibilities better than the rail carriers—thus, reflecting the progress made since they were released from Government operation which wrecked them during the last war.

Shippers Trust I. C. C.—"Contacts with responsible and informed shippers in every section of the United States convince me that the attorney general will get little or no help from them in his campaign against the railroads. The shippers are content to rely upon the fair and impartial decisions of the Interstate Commerce Commission handed down after full and complete hearings at which all parties have had an opportunity to present evidence. Are we to abandon the legal procedure followed by the Commission, which is an arm of Congress, for the methods employed by the attorney general whose record is none too good in the handling of important national matters? Are we now to engage in a political witch hunt directed against such an outstanding example of private management as the railroads? In addition to the setting of class against class, are we to

News Department continued on next left-hand page



greater returns per dollar of investment

The low initial cost and low maintenance cost of high-speed, super-power steam locomotives, as compared with that of other types of prime movers, makes them the highest money earners per dollar of investment. Not only do steam locomotives have all the speed you can use, but they also have the capacity of interchangeability on fast and heavy freights as well as on crack passenger runs. For greater returns on your investment dollar specify Lima-built, super-power steam locomotives.

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now have a responsible official of the Government tour the nation making speeches designed to set one section of the country against another?"

The Allied Florists Association of Illinois, on August 11, told with flowers what it thinks about the recent attack of Attorney General Biddle on the western railroads when it presented a large bouquet of flowers to Ralph Budd, president of the Chicago, Burlington & Quincy. Accompanying the flowers was a card which said: "To Ralph Budd, who as defense transportation commissioner appointed by President Roosevelt, did such outstanding work during the defense period helping to prepare the railroads for war. The Allied Florists Association of Illinois presents these flowers to Mr. Budd and all the railroads in recognition of the great contribution the railroads have made to America's war effort."

Officials of the association, which has 900 members, said they were inspired to make the presentation by a story and small cartoon in the financial section of The Chicago Daily Tribune. In the story Budd denied Biddle's charges that the western railroads have a "czar-like boss" who tells them what to do. "If," Mr. Budd said, "there was such a tough individual and he was responsible for the notable war job performed by the western railroads, the country should hunt him up and present him with the biggest bouquet of flowers obtainable instead of seeking to prosecute him. But of course there is no such person, except in Mr. Biddle's mind. The western railroads have an organization to discuss mutual problems. It is the Western Association of Railway Executives. C. E. Johnston is chairman. But Mr. Johnston has no say over the railroads and merely presides, when he is in Chicago, at meetings to discuss traffic and other problems."

Cut-throat competition among railroads enforced by threats of prosecution under the Sherman anti-trust law as proposed by Attorney General Biddle would bring chaos and ruin to producers and industries throughout the country, Joseph H. Hays, counsel for the Western Association of Railway Executives, told an audience of businessmen at Kansas City, Mo., on August 14.

Mr. Hays said that Mr. Biddle's scheme would nullify the freight rate structure of the nation and scrap existing regulatory practices. The speaker challenged Mr. Biddle to disclose his ultimate aims for the conduct of transportation. He said Congress and the public has a right to know whether Mr. Biddle plans to "neutralize" the Interstate Commerce Commission and himself take over control of the railroads and other forms of transportation through consent decrees whereby the carriers either "submit to his dictatorship or be prosecuted in the courts."

Complying with I. C. Act—"Practically all of the alleged acts cited by Mr. Biddle as the basis for his threatened prosecutions," Mr. Hays said, "are those which are necessary in complying with the letter and spirit of the Interstate Commerce Act and the carefully considered mandates of the Interstate Commerce Commission."

Mr. Hays' remarks were in reply to an attack on the Western railways launched by Wendell Berge, head of the anti-trust division of the Department of Justice, from the same platform a week earlier. He said Berge's speech had been followed a few days later "by a flanking movement executed by Biddle, the veteran of the battle of Montgomery-Ward," in speeches and interviews at Spokane and Seattle.

Rates Approved by I. C. C.—"The freight rate structure has been developed over the decades," said Mr. Hays. "Millions of rates, covering thousands of different commodities and points of origin and destination are involved. A large portion of these rates were established to meet local needs. All of these rates have been approved by the Interstate Commerce Commission, many after lengthy hearings. Violent changes in their relationships will dislocate the whole industrial and agricultural economy of the nation."

Alarmed at the threat of a general overhauling of freight rates, Mr. Hays said, the U. S. Department of Agriculture recently had issued a statement warning farmers, farm organizations and agricultural business men to go slow in reaching conclusions. Alleged discriminations, the Department declared, "are perhaps less important with respect to the portion of traffic covered than many people have thought." The statement warned that radical changes "would tend to curtail the total volume of traffic and hence the volume of trade, production and employment."

Record Refutes Biddle—Referring to the Biddle charges that the Western railroads were involved in a gigantic conspiracy to throttle competition and improvements in railway services, Mr. Hays said the record proves exactly the contrary. "The ten-year period to which Mr. Biddle referred is notable for greater progress in the art of railroad transportation than any other period in railroad history and this in the face of paralyzing financial stress," Mr. Hays said. "That decade saw the development of fast streamlined trains, air conditioned passenger cars and a great many other improvements.

"No other industry ever ventured such vast expenditures to improve its facilities and service in the face of such adverse financial conditions. And when the war came the railroads were ready. The war transportation program was not delayed a single moment. There was no delay expanding or reconverting. And the railroads borrowed no money from the government to finance their war effort.

"Mr. Biddle knows that if his charges about freight rate discrimination were anything more than sheer demagoguery, he could take the complaints to the Interstate Commerce Commission for speedy redress. The attorney general is either obsessed with the possibility of becoming a dictator through perversion of the anti-trust act, or is indulging in cheap politics."

"Big Inch" Ends First Year

The 1,363-mile "Big Inch" pipeline from Longview, Texas, to the refinery centers in the vicinity of Philadelphia, Pa., and New York began its second year of full-length operation August 14, having maintained a daily average movement of 263,000 barrels of crude oil daily during that period. More recently, according to a statement by Petroleum Administrator Ickes, it has consistently exceeded the 300,000 barrels daily movement that was expected of it when all its pumping stations went into operation, and in July it averaged 314,134 barrels a day.

The performance of this pipeline has prevented what could easily have developed into a "catastrophic" oil shortage on the Atlantic seaboard, according to Mr. Ickes. Deputy Administrator Davies observed that 23,000 tank cars operating on an 18-day turnaround schedule would have been required to maintain the average oil movement from Texas to the East coast which this pipeline has carried. Since, due to the increasingly large military requirements for petroleum in the Pacific, many tank cars have been shifted into the West coast service, oil transportation to the East is still "tight," he went on to say, and with demands increasing on both the East and West coasts it remains true that more tank cars are needed than are available.

C. & N. W. to Mark Anniversary of Railway Post Office

The eightieth anniversary of the founding of the first permanent railway post office will be marked by brief ceremonies in the Chicago terminal of the Chicago & North Western on August 28. As part of the ceremonies, a special pouch containing commemorative mail being sent to stamp collectors by the Glen Ellyn Philatelic Club, will be placed on the North Western's Pacific Limited which travels over the original route of the North Western's first railway post office.

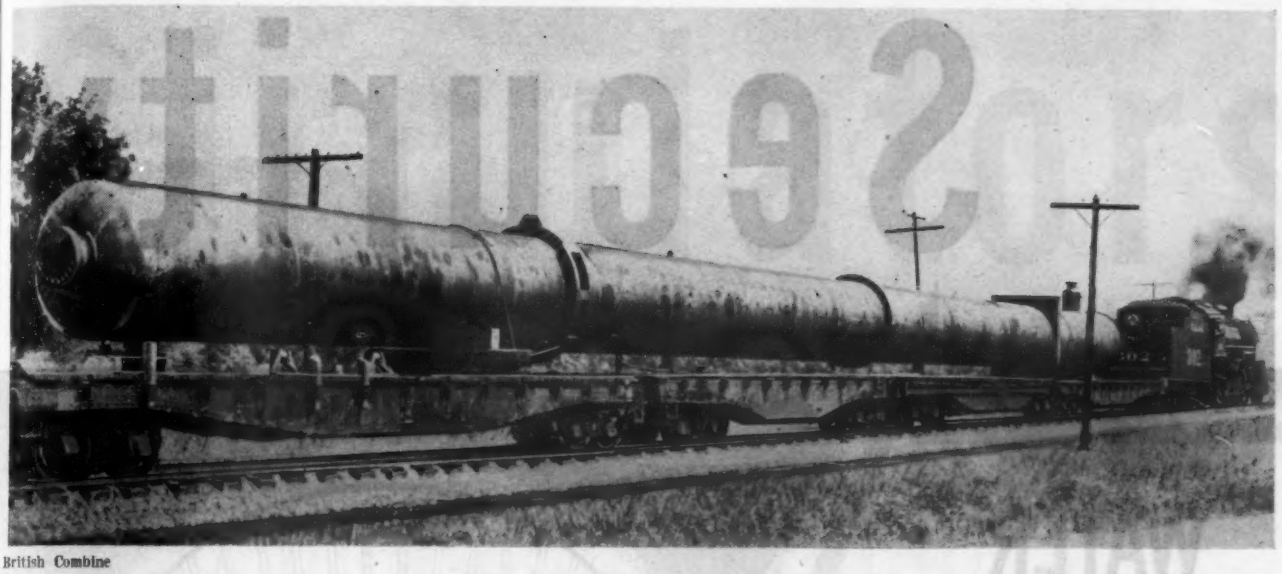
On August 28, 1864, George B. Armstrong, then assistant postmaster of Chicago, sent his first railway post office from Chicago to Clinton, Iowa. Although Armstrong is generally credited with the first permanent railway post office, others preceded him with various arrangements for sorting mail enroute, none of which were permanent. Mr. Armstrong devised his system to operate as a permanent adjunct of the national postal service.

I. C. C. Service Orders

Because of "an acute general shortage of ice in the West," the Interstate Commerce Commission has issued Revised Service Order No. 224, effective August 16, which requires railroads handling refrigerator cars loaded with fresh fruits or fresh or green vegetables originating west of the Mississippi river to limit initial icing and reicing of such cars to three-fourths of bunker capacity. The order applies to icing or reicing at any point in the United States of such cars originating in the states of Minnesota, Iowa, Missouri, Arkansas, and Louisiana (west of the Mississippi) or west thereof, including imported shipments cleared through ports of entry in that territory.

This order superseded Service Order No. 224, which was to have been effective the same date, under which the same icing restrictions would have been applied to shipments originating in the territory generally between the Rocky mountains and the Mississippi river and to icing at points east of the Rocky mountains.

As a further result of the ice shortage



British Combine

The Longest Shipment by Rail?

This cylinder, 163 ft. 7½ in. long, was recently shipped by the Chicago Bridge & Iron Co. at Birmingham, Ala., to a plant in the Chicago district. Loaded on four flat cars, the cylinder moved L. & N. Gadsen, T. A. & G. Chattanooga, N. C. & St. L. Martin, I. C. beyond, and required a careful check of all clearances. H. F. Bohr, vice-president of the T. A. & G., believes this to be the longest shipment ever moved by rail and would like to know if anybody has any record to the contrary.

* * * *

in the West, Service Order No. 226, effective August 15, limited the amount of ice used in retop icing certain refrigerator cars loaded with fresh or green vegetables to 5,000 lb. or the amount used to initially top ice the car, whichever is smaller. This order was made applicable to shipments originating at any point in New Mexico, Colorado, Wyoming, or Montana, or west thereof, and covered retop icing at any point east of the eastern boundaries of the states named, and also at El Paso, Tex., La Junta, Colo., Pueblo, Denver, Laramie, Wyo., or Cheyenne.

Service Order No. 157, applying to weighing certain carload shipments of lime rock on the Seaboard Air Line, has been set aside. Through Amendment No. 3 to Service Order No. 200, effective August 11, the restriction on initial icing of refrigerator cars loaded with potatoes to three-fourths bunker capacity previously prescribed has been extended to cover potatoes originating on the Union Pacific in Colorado, Kansas and Nebraska, and that road has been given the option of initially icing such cars en route after the car is loaded.

Coal Movement Is Ahead of 1943

According to Solid Fuels Administrator Ickes bituminous coal forwarded to Great Lakes docks through lower Lake Erie ports through the navigation season up to July 31 amounted to 26,904,668 tons, or 6,704,874 tons more than last year's total at the same time. Forwardings through Lake Michigan ports to upper Great Lakes docks through July 30 amounted to 1,013,656 tons, as against 403,032 tons in the corresponding period last year. This "huge increase," it was explained, is due to the acceptance by railroads of coal from the Illinois and western Kentucky mines for locomotive fuel.

Lake Ontario forwardings were less than last year's. For the calendar year to July 29, shipments to the Washington-Oregon area totaled 1,879,425 tons, as compared to 1,760,625 tons in the same 1943 period. The total bituminous tonnage moved into New England in the same period was 5.9 per cent greater than that of the corresponding 1943 period, while the increase in anthracite forwardings was 8.6 per cent over last year's. It was pointed out that 1943 shipments were reduced by "numerous mine work stoppages, which cut heavily into production."

U. S. Truck Affiliates Can't Continue Dual Operations

Three U. S. Truck Lines subsidiaries, two of them common carriers and the other a contract carrier whose routes cover parts of the same territory, have been called upon by the Interstate Commerce Commission, Division 5, to eliminate the "dual operations," either by withdrawal of the contract carrier from the U. S. Truck system or acceptance by the common carriers of amended certificates prohibiting further service by them to the points served by the contract carrier.

The report is in No. MC-1771, the investigation instituted by the commission upon its own motion for the purpose of looking into the matter of dual operations among various U. S. Truck subsidiaries. The only situation, wherein dual operations were found, involved Motor Express, Inc., and Cleveland, Columbus & Cincinnati Highway, Inc., common carriers, and the Superior Transfer Company, contract carrier.

The commission in another proceeding (No. MC-1777) has authorized for Superior a permit (not yet issued) covering operations as a contract carrier of "such general merchandise as is dealt in by retail general stores" from Toledo, Ohio, to points in Lenawee and Monroe counties, Mich. Motor Express' certificate covers routes between Buffalo, N. Y., and Toledo and Montville, Ohio, between Toledo and specified Michigan points, and between Elkhart, Ind., and Toledo; C. C. & C.'s routes include those between Toledo and Fort Wayne, Ind., between Fremont, Ohio and Toledo, between Toledo and Cincinnati, Ohio, and between Detroit, Mich., and Columbus, Ohio.

The commission's finding that the foregoing set-up of dual operations under common control will not be consistent with the public interest is followed by a finding that the difficulty will be resolved if Motor Express and C. C. & C. file petitions for amended certificates excluding service on traffic originating at or destined to Toledo, and intermediate or off-route points in Lenawee and Monroe counties, Mich.; or if U. S. Freight divests itself of control of Superior. It is further found that if one of these alternatives is not adopted, the No. MC-1777 order which authorizes issuance of the permit to Superior "will be vacated and set aside."

Chairman Patterson, concurring-in-part, agreed with the majority, "except as to the election provision permitting Motor Express and C. C. & C. to file a petition for amendment of their certificates."

Industrial Brochure Issued by the Nickel Plate

"Along the Line in Ohio" is the title of the first of four booklets to be issued by the Industrial Development Department of the New York, Chicago & St. Louis (Nickel Plate Road). As stated in the introduction "the purpose of this book . . . is to present a composite picture of this territory along the line in Ohio for the convenience, utilization, and interest of all, especially those needing pertinent information and statistics."

The author, "Nick Plate", takes the reader for a trip over the Nickel Plate line in Ohio. Important towns and cities on the line are "visited" and the reader is told of their history, development, recreational facilities and industries. The booklet contains a number of maps of the area, in color,

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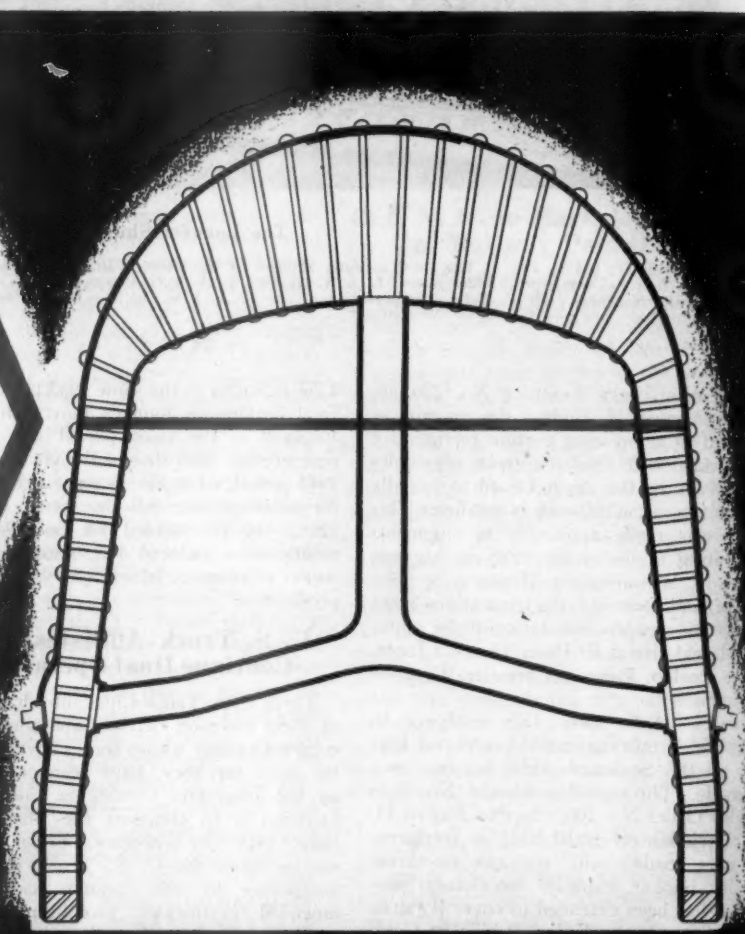
Security

WATER DROPPED 16 7/8 INCHES BELOW CROWN SHEET

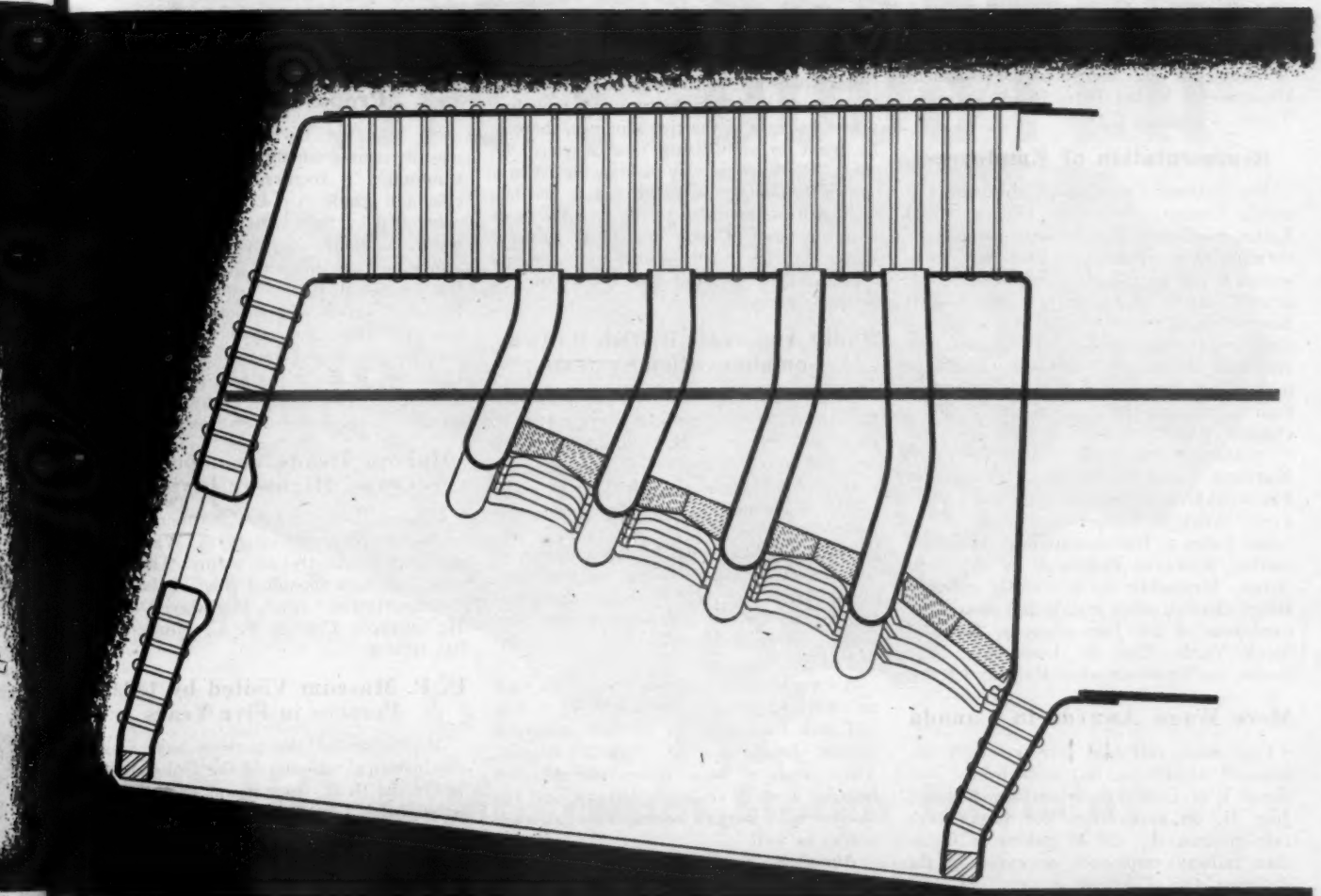


On a midwestern railroad the water level in a Mikado type locomotive, equipped with four Security Circulators, receded sixteen and seven-eighths inches below the crown sheet — yet only a few radial crown bolts pulled.

The Security Circulators produced a positive flow of water over the center of the crown sheet. This protected the crown sheet despite the low water, thus preventing a serious boiler accident.

With Security Circulators suitably spaced from flue sheet to door sheet, an ample and positive flow of water over the entire crown sheet is thus assured in the event of a receding water level.

Circulators



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SECURITY CIRCULATOR DIVISION

which indicate mineral resources, natural gas lines, ground water regions, generating stations and transmission lines, major forest types, agricultural income, dairying areas, livestock areas, and vegetable and fruit producing areas. It also contains county statistics on grains, sugar beets, fruit trees, and animals; cities, populations and utilities; and an analysis of county populations.

In conclusion "Nick Plate" says "We have traveled on the main line of the Nickel Plate, we've walked the ties of spurs, and we've drifted through the woods and into the barnyards of farmers, we've faced roaring magnesium furnaces and crawled onto railroad engines, but we've seen the Nickel Plate territory in Ohio as she really is. . . ."

Requests for the booklet, or for statistics or information on the territory, should be addressed to the Industrial Development Department, Nickel Plate Road, Terminal Tower, Cleveland 1, Ohio.

Representation of Employees

The National Council of Railway Patrolmen's Unions, American Federation of Labor, has failed in an effort to have itself certified as the Railway Labor Act representative of patrolmen (lieutenants, sergeants, guards, watchmen) in the Special Service Department of the Wabash. Reporting on results of a recent election, the National Mediation Board was unable to make a certification for the reason that less than a majority (28 out of 63) of those eligible to vote cast legal ballots.

In another recent election the National Maritime Union of America, Congress of Industrial Organizations, supplanted the Car Ferry Workers Independent Union of the Great Lakes as representative of unlicensed marine personnel employed by the Ann Arbor. Meanwhile the previously unrepresented clerical, office, station and storehouse employees of the Joint Agency, National Stock Yards, East St. Louis, Ill., have chosen the Brotherhood of Railway Clerks.

More Wage Awards in Canada

Four more rail rate decisions were announced, at Ottawa, last week by the National War Labor Board, whose findings, July 31, on applications for basic wage rate increases by the 18 unions of Canadian railway employees, appeared in the *Railway Age* of August 5, page 244.

In these latest decisions the wages of sleeping and dining car employees on the Canadian National have been adjusted. Their monthly hours of service are to be 240, with overtime for time worked in excess of that figure, on the actual minute basis at pro rata rate. Decisions on vacations with pay have been reserved, but basic rate increases allowed, retroactive to November 25, 1943, include: 6 cents an hour to all hourly paid classifications; $2.88 per week to all weekly paid classes; $12.48 per month for those on a monthly basis.

Express and cartage employees on the Canadian Pacific had requested an increase of $20 per month in basic wage rates. The same basic rate increases as were listed above for the sleeping and dining car employees have been allowed here, with increases retroactive to October 21 of last year.

Elevator grain handlers, employed by the C. P. R. at St. John, N. B., have been awarded an increase of 3 cents an hour, effective from February 3, 1943. An increase to wharf freight handlers had already been granted.

On the question of a basic month for dining car employees of the C. P. R., the Board has ordered that 240 hours or less shall constitute a basic month's work, and that all time worked in excess of that figure shall be paid for as overtime on the actual minute basis at pro rata rate.

Bus Line Extensions Stopped

No permits for the inauguration or extension of inter-city bus routes will be issued by the Office of Defense Transportation while the supply of large tires remains critically short, according to O. D. T. Director Johnson. "With many inter-city buses laid up and unable to operate on established routes because of the tire shortage, there is no point to authorizing new service," he said. "We have no way of knowing when a sufficient supply of large size truck and bus tires will be available to meet replacement requirements." Under O. D. T. General Order No. 11, extensions of inter-city bus operations are prohibited unless authorized by that agency.

Radio Augments British Railway Communication Systems

Despite disruption in communications by the enemy, British railways have added to their network over 21,000 miles of wires and 400 new circuits, T. D. Slattery, general traffic manager of the British Railways' headquarters, in New York, has revealed.

"Not only have more circuits augmented the railways traffic control system," reports Mr. Slattery, "but on the Southern and Great Western railways entirely new traffic control networks have been installed."

A complete radio network has been built up, with 42 fixed stations and 40 mobile rail and road sets, to further safeguard against breakdown of physical circuits. These stations have inter-communication between centers on each railway and between radio stations operated by all railroads, as well.

American, British and Canadian forces have assisted in the installation of this equipment.

More Light Trucks Released

The Office of Defense Transportation has resumed the acceptance of applications for the purchase of new light motor trucks for essential civilian use. The action is expected to dispose promptly of the small number of such vehicle remaining in dealers' stocks.

Acceptance of applications for these trucks (below 9,000 lb. gross vehicle weight) was discontinued last month because of the exhaustion of the essential civilian pool. On August 7 government exempt agencies relinquished their claims on the light units remaining and these units reverted to a common pool. This pool will now be drawn on by essential civilian users, as well as by government exempt agencies. O. D. T. district offices have been notified that applications may be approved and forwarded to Washington for final consideration when the applicant furnishes a letter from a sales agency stating that the specific light truck is in stock and giving the make and serial number.

More Big Trucks in 1945

The War Production Board announced August 5 that production of 56,705 commercial trucks has been programmed for the first quarter of 1945. This compares with 10,894 units programmed for the first half of 1944 and 41,068 for the last quarter of this year. No light trucks are included in the schedule for the first quarter of next year, which consists of 40,000 medium trucks, 13,366 in the light heavy category, and 3,339 of the heavy class.

Ask Approval of Rail Control of Proposed Air Lines

So that the Civil Aeronautics Board may determine whether its approval of the transaction is required, the Missouri Pacific and Eagle Air Lines, Inc., which is controlled by the railroad, have applied to the C. A. B. for approval of such control, although the applicants are of the opinion that approval is not required under the terms of section 408 of the Civil Aeronautics Act, since the railroad holds control and does not propose to acquire it and since the air line is not now an air carrier, although it has pending before the board an application for authority to become one.

Murrow Heads Transportation Corps' Highway Division

Colonel L. V. Murrow, former director of highways of the state of Washington and more recently an Army Air Force pilot, has been appointed chief of the Army Transportation Corps' Highway Division. He succeeds Colonel F. C. Horner who has retired.

U. P. Museum Visited by 143,000 Persons in Five Years

More than 143,000 persons have visited the historical museum of the Union Pacific at Omaha, Neb., since it was opened to the public on August 8, 1939. Despite travel difficulties, monthly attendance at the museum has increased almost 1,000. Visitors have registered from every state in the union and from 41 foreign countries.

The museum presents a record of the old West in its exhibits of pictures, weapons, documents, furniture, books and personal possessions of the early pioneers. Since the museum pened, the original collection has been enlarged by donations and loans which fill seven additional exhibit cases.

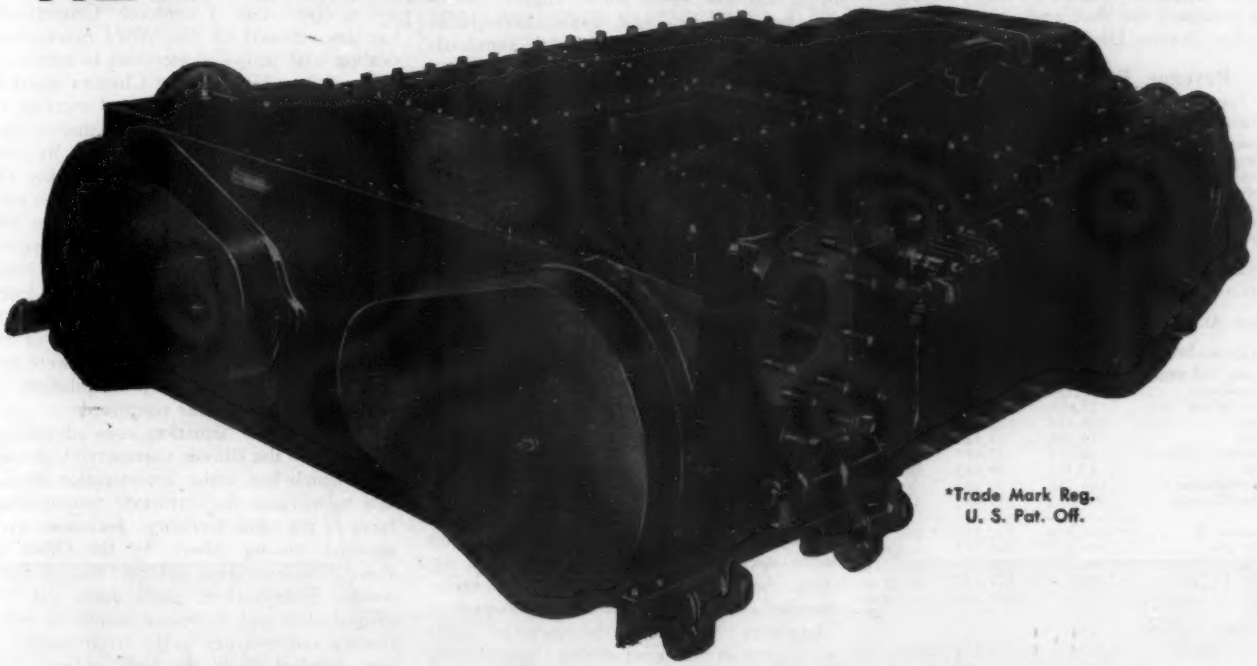
Annual Report of C. & O. Given Top Honors

"Most outstanding" of any 1943 annual report in the railroad field was that of the Chesapeake & Ohio, issued March 31, and described briefly in the *Railway Age* of April 8, according to the recent findings of an independent board of experts, which, acting for Financial World, made a study of annual reports in various business and industrial fields.

Judges included: (Chairman), Dr. Lewis

News Department continued on next left-hand page

THE DESIGN OF THE NEW TYPE "E" BOOSTER*



*Trade Mark Reg. U. S. Pat. Off.

Assures Maximum Steam Economy

IN developing the new Type "E" Booster to meet current conditions, many new factors in steam locomotive operation have been recognized, as well as the trend toward higher boiler pressures.

The short cut-off takes full advantage of the expansive properties of the steam and effects marked economies in steam consumption. The cast steel cylinders have integral inlet and exhaust manifolds. The large steam and exhaust passages give maximum inlet pressures and minimum back pressures. Furthermore, a new design of ball joint, with self adjusting packing and large passage areas, insures free flow of steam to and from the Booster.

Other outstanding features contribute to more powerful starting effort, smoother operation and higher operating speeds.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

Haney, professor of economics, New York University; Norman Stabler, financial editor, New York Herald-Tribune; Glenn Griswold, editor of Planning, and of Public Relations News; R. C. Mayer, president, National Association of Public Relations Counsel; and Norman Bel Geddes, industrial artist and designer.

Freight Car Loading

Loadings of revenue freight for the week ended August 12 totaled 896,172 cars, the Association of American Railroads announced on August 17. This was an increase of 5,714 cars, or 0.6 per cent above the preceding week, an increase of 9,008 cars, or 1.0 per cent above the corresponding week last year, and an increase of 27,327 cars or 3.1 per cent above the comparable 1942 week.

Loading of revenue freight for the week ended August 5 totaled 890,458 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, August 5

District	1944	1943	1942
Eastern	161,856	165,689	156,142
Allegheny	194,209	191,954	186,039
Pocahontas	56,513	55,245	55,245
Southern	120,520	116,977	117,790
Northwestern ..	139,788	143,670	141,867
Central Western	141,804	128,211	124,039
Southwestern ..	75,768	70,387	69,099
Total Western Districts	357,360	342,268	335,005
Total All Roads	890,458	872,133	850,221
Commodities			
Grain and grain products	52,299	57,862	41,955
Live stock	15,669	14,161	12,123
Coal	176,116	173,146	163,478
Coke	14,288	14,329	13,878
Forest products	50,073	47,610	53,027
Ore	82,165	88,043	89,036
Merchandise l.c.l.	104,786	99,002	89,182
Miscellaneous ..	395,062	377,980	387,542
August 5	890,458	872,133	850,221
July 29	910,533	885,525	863,576
July 22	903,034	883,838	855,515
July 15	908,804	877,335	857,146
July 8	745,141	808,630	855,158
Cumulative Total, 32 Weeks ..	26,303,164	25,280,164	26,098,757

In Canada.—Carloadings for the week ended August 5 totaled 69,815 as compared with 71,109 for the previous week, and 67,444 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada	Total Cars Loaded	Total Cars Rec'd from Connections
Aug. 5, 1944	69,815	37,584
July 29, 1944	71,109	27,509
July 22, 1944	72,552	38,469
Aug. 7, 1943	67,444	40,772
Cumulative Totals for Canada		
Aug. 5, 1944	2,146,632	1,198,233
Aug. 7, 1943	1,986,672	1,230,874
Aug. 8, 1942	1,978,571	1,029,463

Pullman Company Negotiates Sale to Railroads

The Pullman Company is opening negotiations for the sale of its sleeping car business to the railroads, it was disclosed in the second quarter statement to stockholders of Pullman Incorporated, issued on August 12 by D. A. Crawford, president.

"As subsequently announced," the statement said, "the board of directors of Pullman Incorporated have decided that in order to carry out the requirements of the District Court decree, we would endeavor to dispose of the sleeping car business. In pursuance of this decision the management of the Pullman Company is proceeding, in the first instance, to negotiations with the railroad users of Pullman sleeping car service, for development of a plan for separation of the sleeping car business and its connected properties, from the remaining companies in the Pullman group.

Would Preserve Car Pool—"We would propose to include in the plan to be developed for take-over of the sleeping car business by a railroad buying group, the opportunity for continuation of the centralized pool of sleeping car operations under the management of a going, experienced organization that could be taken over with the physical properties. This would assure maintenance of the pool system of sleeping car service, which the Court in effect found to be desirable in the public interest and to the economic advantage of the railroads, as well as maintenance of the high standards of travel service created by the Pullman Company in its more than three-quarters of a century of activity in this business.

"Such an arrangement would also permit continuance of that mobility of cars, equipment, supplies and personnel which are necessary to meet the fluctuating demands engendered by the seasonal ebbs and flows of sleeping car travel throughout the country."

Omission in Train Order Leads to Head-on Collision

As a result of a head-on collision near Eastrop, Tex., on the Missouri-Kansas-Texas on June 23, the Interstate Commerce Commission has recommended that the road establish "an adequate block system" in the territory involved. The accident occurred at 7:23 a. m. on the road's Houston division at a point about 106.7 miles south of Waco, on a level, single-track line where trains were operated by timetable and train orders. According to the report of the investigation conducted under the supervision of Chairman Patterson, the average daily movement at this point during the preceding 30 days was 21.46 trains.

In the collision an 8-car southbound passenger train, No. 25, the "Katy Flyer", while moving about 30 m.p.h., struck northbound passenger equipment extra No. 705, consisting of 17 sleeping cars, while the latter was moving about 5 m.p.h. Both locomotives were derailed, as were the first car of No. 705 and the first three cars (a baggage-express car, baggage-mail car, and coach) of No. 25. All cars in both trains were of steel construction. The derailed equipment was considerably damaged, and one employee was killed and 54 passengers and 12 employees were injured.

The immediate cause of the accident was a lap in authority of two opposing trains. No. 705 held a train order which erroneously authorized it to proceed over the territory involved with right over all trains, although it was not intended to give it such right over first class trains. No. 25 was a first class train and, consequently, was not given a copy of the order, and its crew had no knowledge of the authority given No. 705. The record of the investigation indicated, according to the report, that the operator who copied the order delivered to No. 705 repeated the words "except first class trains" to the dispatcher when taking the order, but he did not copy these words in the body of the order. Because of track curvature and obstructions, the crews of the opposing trains were unable to see the other train at a sufficient distance to avert the collision, although the engineers took action to stop their trains.

Pointing out that segments of the line to the north and to the south of the territory where the accident took place were equipped with an automatic block signal system, the report concluded with the observation that, "if an adequate block system had been in use in the territory involved, these opposing trains would not have been permitted to occupy the same block simultaneously, and this accident would not have occurred."

I. C. C. Drops Chicago Interstate Commuter Fare Study

The Interstate Commerce Commission has discontinued its No. 28974 proceeding, dealing with proposed increases in interstate commutation fares in the Chicago district, with the finding that a general increase is not justified at this time. The matter was investigated by the commission on its own motion, following cancellation on May 15, 1943, of the commutation fare increases previously authorized in the Ex-Parte No. 148 proceedings. Similar investigations were instituted at the same time of interstate commutation fares in the New York, New England, and Philadelphia, Pa., regions, but these were discontinued upon request of the railroads on the ground that they were unable to make the necessary compilations of statistics while the war continued.

The Chicago situation was developed jointly with the Illinois Commerce Commission, which had under investigation proposals to increase the intrastate commutation fares in the same territory. Increases were opposed, among others, by the Office of Price Administration and the Office of Economic Stabilization, particularly on the ground that any increases would be inflationary and contrary to the requirements of the so-called "hold the line" policy. The commission indicated that its conclusions were developed on the basis of the national transportation policy as related to the maintenance of an adequate transportation system.

Interstate Business Is Small—Traffic moving on interstate commutation fares is but a small part of the commutation business in the Chicago territory, and revenues therefrom in 1942 for all roads concerned amounted to only $459,587, or less than 4.5 per cent of their total commutation revenue in that district. Only six roads were shown to have participated in interstate commutation business in that year, their respective revenues being, for the Chicago & North Western, $32,398; Milwaukee, $6,456; Chicago, North Shore & Milwaukee, $10,055; Chicago, South Shore & South Bend, $334,834; New York Central, $67,027; and Pennsylvania, $8,817.

In its report, the commission pointed out that the present restrictions on the use of automobiles and the increased number of persons employed in the Chicago district undoubtedly have combined to produce a substantial increase in commutation traffic

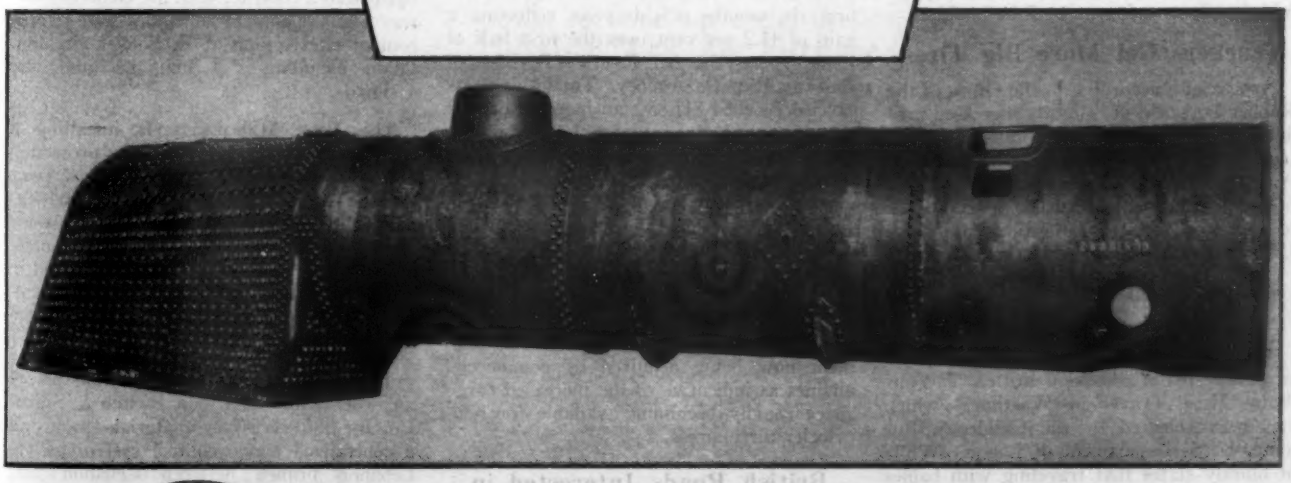
News Department continued on next left-hand page

High Sustained Boiler Capacity With Highest Boiler Efficiency

MEANS:

Maximum evaporating and superheating surfaces within clearance limits . . . a small flue boiler with an Elesco superheater is designed to meet these requirements.

Specify this combination for your new power.



A-1600 (A-1200)

ELESCO

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
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and revenues, with favorable net results. "Reasonably low commutation fares are necessary in normal times," it went on to say, "and nothing shown of record indicates that they are less essential to the war effort during the present emergency. Commutation service is of prime necessity to thousands of people and the fares charged probably are as important as any other item in their costs of living."

Commission Findings—The commission's decision to discontinue the case resulted from its findings that: "The cost data submitted by the respondents can not be accepted as accurately reflecting the costs of the commutation service of any respondent; that the cost of service, while an important element, is not the sole consideration in determining the reasonableness of commutation fares; that there is a wide variation in respondents' commutation fares that respondents' revenues derived from commutation traffic have been steadily increasing; that the passenger operations as a whole of each respondent are making a substantial contribution to its present net earnings which are considerably in excess of the earnings of the prewar years; and that a general commutation fare increase is not necessary . . . to carry out the national transportation policy."

Commissioners Mahaffie and Alldredge concurred in the result of the majority's decision. The dissent of Chairman Patterson and Commissioners Porter and Miller was noted without comment.

D. L. Locomotive History

The Delaware, Lackawanna & Western has published a series of photographs of its principal types of motive power, 1903 to date, together with brief descriptions of the engines and a thumb-nail history of the road. The publication takes the form of a 14 in. by 21½ in. sheet, printed on both sides, and folded to form a 5½ in. by 7 in. booklet.

Truckers Get More Big Tires

As a result, according to the Office of the Rubber Director, of "slightly increased production," a supplemental allotment of large truck and bus tires has been authorized for August rationing, making the total available of 8.25 and larger tires 85,000, as compared to the need for 165,000 estimated by the Office of Defense Transportation.

U. S. Department of Labor Issues Travel Hints

"Painless" travel pointers for mothers are suggested in a booklet entitled "If Your Baby Must Travel in Wartime," which has been released by the Children's Bureau, U. S. Department of Labor. While it bluntly states that traveling with babies is "certainly not something to attempt lightly," the message does observe that if you must do so "you'll be doing a real war service if you make it as painless as you can to the transportation system, your baby, and yourself."

The booklet is amusingly illustrated by Cartoonist Gluyas Williams, whose drawings plainly reflect conditions which are apt to confront the traveling mother. They are, for example, told to plan well and travel light, carry necessary food and clothes for the infant, see to the comfort of the child and exercise good judgment in accepting offers from fellow travelers.

Part of the booklet deals with bus and automobile travel and the best procedures to follow when adopting those forms of transportation.

New N. M. B. Mediator

The National Mediation Board has appointed James M. Holaren of Pittsburgh, Pa., to its staff of mediators. The appointee, the announcement said, "has had more than 20 years of active railroad service with the Pennsylvania and for the past two and one-half years has been employed as federal conciliator for the U. S. Department of Labor."

C. & E. I. Boilermaker Buys $12,562 of War Bonds

Charles J. Deux, a boilermaker of the Chicago & Eastern Illinois, has purchased 670 war bonds, all of $25 denomination and a purchase price of $12,562.50. His goal has been 134 bonds for each of the five war bond drives. His family of three depend for the necessities of life upon the income from rooms which they rent to war workers.

June Truck Allocations

Between May 28 and June 30 civilian users were allocated 14,071 medium and heavy trucks and 2,419 trailers, while government permit holders received 2,542 trucks and 92 trailers, the War Production Board reported August 16. Since the rationing program went into effect in March, 1942, the W. P. B. has released 261,192 vehicles, it revealed.

Air Express Up 11.2 Per Cent Over First Half of '43

More than 15,300,000 lb. of air express were handled for domestic airlines in the first six months of this year, reflecting a gain of 11.2 per cent over the first half of 1943, reports the Air Express Division of Railway Express Agency. Total shipments carried reached 811,850, an increase of 12.5 per cent over the comparable period last year.

It is further stated that international air express shipments averaged 18,000 a month, with a total of 112,177 for the six months period, or a gain of 28.3 per cent over the first half of 1943. Express charges on this traffic were about $400,000, a gain of 13.6 per cent.

The report pointed to additional equipment now being acquired by commercial airlines as indicative of the increased cargo space rapidly becoming available for non-priority air express.

British Roads Interested in 16 Airlines

British railway companies have financial interests in 16 airlines, three of them holding companies. Prior to the war, their investment totaled $2,500,000, with a further $1,500,000 having been spent on development, T. D. Slattery, general traffic manager, British Railways in New York, has announced.

Such restricted services as are permitted today are operated in the name of five of these companies, the routes covered being Railway Air Services, Ltd.-Liverpool-Belfast and Glasgow-Belfast; Scottish Airways, Ltd. Glasgow-Western Isles, and the Hebrides, Inverness - Orkneys - Shetlands; Isle of Man Air Services, Ltd., Liverpool-Isle of Man; Great Western & Southern Air Lines, Ltd.,-Land's End-Sicily Isles; West Coast Air Services, Ltd., Liverpool-Dublin.

Last published figures for 1943 showed this group to have flown over 1,500,000 route miles, carrying nearly 65,000 passengers and conveying over 1,500,000 lb. of mails and freight.

Equipment and Supplies

PASSENGER CARS

The LONG ISLAND is planning to build five steel frame double-deck motor cars and five steel frame trailer cars as soon as materials can be obtained. An order for this equipment was placed with the railroad's shops at Altoona, Pa., in September, 1941, and later cancelled when materials for construction of the cars became unavailable.

IRON AND STEEL

The DELAWARE & HUDSON has ordered 21,300 gross tons of rail from the Bethlehem Steel Company.

SIGNALING

The DENVER & RIO GRANDE WESTERN has placed a contract with the General Railway Signal Company for a unit-wire remote control interlocking at E. Soldier Summit, Utah, including 2 switch machines and 4 signals.

The PERE MARQUETTE is installing a relay interlocking plant for the protection of the drawbridge over the Saginaw river and the control of existing switches and signals in the vicinity of Washington avenue at Saginaw, Mich. The desk-type control machine and relay rack are to be located in the new bridge control tower. The materials for this project have been ordered from the General Railway Signal Company.

The LOUISVILLE & NASHVILLE has placed an order with the Union Switch & Signal Co. for the necessary materials to install a centralized traffic control system on the Lebanon branch between Lebanon Jct., Ky., and Sinks, a distance of 107 mi. of single track, with a style "C" control machine located in the dispatcher's office at Louisville, 30 mi. north of Lebanon Jct. In addition to the code equipment, the order includes searchlight high and dwarf signals, style M22B dual control switch machines, electric lock layouts, relays, rectifiers and housings. The field installation work will be carried out by the railroad company's regular signal construction forces.

News Department continued on third right-hand page

MOTIVE POWER

does the Impossible

with HSGI WEAR RESISTING PARTS

PERFORMANCE far beyond normal standards is routine with every locomotive in service today. Higher mileage, fewer layups—to the extent formerly thought impossible—is expected. And helping motive power to stand up under these grueling demands, is HUNT-SPILLER *Air Furnace* GUN IRON, used by many roads.

Resistance to wear and easy machining are factors proved by low costs for mileage and maintenance with HSGI parts. The more complete the installation, the greater economy and efficiency.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

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HUNT-SPILLER GUN IRON

Air Furnace

1880

This train made brakemen better insurance risks

Braking used to be one of the hazardous professions. When the train started down a grade or neared a station, a toot of the engine whistles galvanized the brakemen into action. They trusted to muscle to set up the brakes, and to luck as they navigated the narrow, often slippery running board from car to car. No brakeman ever got a welcoming smile when he applied for insurance.

The first Freight train to be completely equipped with Westinghouse Air Brakes launched a new era. The railroads were quick to recognize the benefits and advantages of this application . . . just as they had recognized the value of the brake in passenger service a few short years before . . . and to adopt it. The results, in terms of greater safety and expanded service, are too great to calculate.

75 Years of Pioneering

WESTINGHOUSE AIR BRAKE COMPANY, WILMERDING, PA.

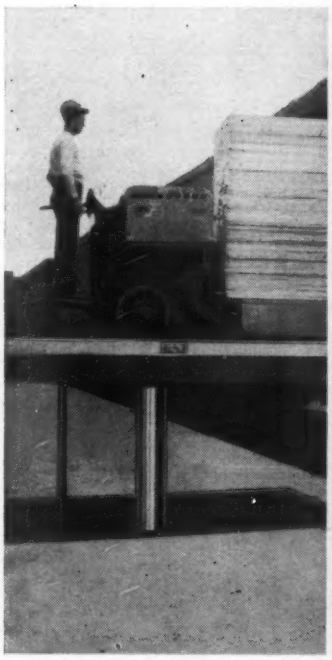
1869 1944

TO PERMIT TODAY'S TRAINS TO MOVE AT SHORTER INTERVALS WITH HEAVIER LOADS AT HIGHER SPEEDS—SAFELY.

Important modern developments in braking have not been limited to main-line applications. The Westinghouse No. 6-DS equipment and the 3-CD Compressor were specifically developed for Diesel-electric switchers. The equipment is making a noteworthy contribution to speedy, flexible operation.

Oildraulic ANSWERS 3 BIG QUESTIONS

IN RAILROAD OPERATION



FREIGHT OR BAGGAGE

Speed? Man-hours? Safety?

Progressive railroads are now preparing for the stiffer competition that the post-war period is sure to produce. Rotary Oildraulic Elevators and Levelators offer an ideal means of speeding up operation as well as saving valuable man-hours.

LEVELATORS HAVE MANY USES

Rotary's Levelators are now saving thousands of man hours in all kinds of industries as well as for the railroads.

These electrically operated oil hydraulic shorter travel elevators are ideal for the handling of freight, baggage or express in terminals as they are both rapid acting and rugged. The unit above is one of the several which completely displaced a loading dock and ramp arrangement in the plant of E. L. Bruce Co. of Memphis, Tenn. Several Levelators were recently installed in a plant processing railroad ties.

Levelators are furnished with such safety devices as side guards, under car skirting, etc. Push button, manual valve and many other types of control are available.

Oildraulic Elevators

Rotary's Electric Oildraulic elevators offer advantages unequalled by other types of equipment for depot and freight house use. New construction costs are much less with this type of elevator because no penthouse or heavy load-bearing wall columns are required—the loads are "pushed up" from below instead of being "pulled up" from above. When installed in old buildings great savings are effected in building costs. We are frequently called upon to replace existing water operated hydraulics that have become wornout or obsolete. In such cases our hydraulic jack can usually be installed in the old outer cylinder which simplifies the installation.

Oildraulics enjoy an enviable reputation for uninterrupted service at negligible maintenance cost as well as for low per trip operating cost.

ROTARY LIFT COMPANY

REPRESENTATIVES IN ALL KEY CITIES, CANADA AND MEXICO

1036 KANSAS

MEMPHIS, TENNESSEE

Construction

ATLANTIC COAST LINE.—Division 4 of the Interstate Commerce Commission has authorized this road's subsidiary, the Fort Myers Southern, to relocate its line from Naples, Fla., to a point about 7 miles north, employing the right-of-way of an abandoned line formerly operated by the Seaboard Air Line.

The project is expected to cost $180,025, to be met from funds in the road's treasury. It will give the road a more suitable location at Naples than its present line, which is to be abandoned.

CANADIAN NATIONAL.—The New Brunswick Contractors, Ltd., Fredericton, N. B., have begun work on a one-story car service building which is to be erected for the Canadian National at Moncton, N. B., at estimated cost of $32,000. The new building will be of wooden construction on a concrete foundation, 200 ft. long by 30 ft. wide.

Construction of the building is part of a project, to provide greater efficiency in car repair work at the station yard, which includes re-arrangement of the existing power house and railway tracks, and the installation of platforms, etc., which latter work will be performed by the railroad's own forces. Total cost of the work is estimated at $67,000.

CENTRAL OF GEORGIA.—This railroad has awarded contracts for the construction of a new bridge and revision of its line in the Birmingham district near Leeds, Ala., at estimated cost of $224,130, to the C. G. Kershaw Contracting Company, Birmingham, Ala., for grading work, and to W. J. Tidwell, Douglasville, Ga., for masonry work.

CHICAGO, BURLINGTON & QUINCY.—This road has received the approval of the War Production Board for five construction projects which, when completed, will cost approximately $3,650,000. Included in this work will be construction of a repair shop for Diesel locomotives at 58th and Ogden avenues, Chicago; the enlarging and modernizing Diesel facilities at 14th and Canal streets, Chicago; the installation of new Diesel facilities at Denver, Colo.; the conversion of steam locomotive shops at West Burlington, Iowa, to handle Diesel engine repairs; and the installation of 228 miles of Centralized Traffic Control between Lincoln, Neb., and McCook.

NORTHERN PACIFIC.—This road has awarded a contract, amounting to approximately $200,000, to the Austin Company, Seattle, Wash., for the modernizing of its locomotive shop and roundhouse steam plant at Livingston, Mont. Included in the work is the replacement of four 200-hp. boilers by two 700-hp. boilers and the installation of coal handling and storage equipment, a new mechanical ash conveyor, new pumps and a plant for treating boiler feed water. Floor space will be increased and the roof raised to house the enlarged facilities.

Supply Trade

The Independent Pneumatic Tool Company, Aurora, Ill., has been granted a third renewal of its Army-Navy "E" award, won originally on October 8, 1942.

The **H. K. Porter Company** of Pittsburgh, Pa., has purchased the Fort Pitt Steel Casting Company, McKeesport, Pa., manufacturers of pressure and alloy steel castings. The Fort Pitt Company will continue under the present management.

Ralph Schmidt, formerly chief, rail engineering, field service group under the office of the chief of transportation, U. S. War Department, has been appointed assistant chief mechanical engineer of the **Canadian Locomotive Company.**

Mark Noble, has been appointed Pacific Coast sales representative of the **Pullman-Standard Car Manufacturing Company** with headquarters in San Francisco, Cal., to succeed Latham McMullin, deceased. Mr. Noble has been associated with Mr. McMullin for the last 20 years.

OBITUARY

Argyle Campbell, president of the Enterprise Railway Equipment Company, Chicago, died at San Clemente, Cal., on August 12.

Edward Olriksen, manager of the general materials and equipment department of the Robert W. Hunt Company, with headquarters at Chicago, died in that city on July 28.

Latham McMullin, west coast representative of the Pullman Standard Car Manufacturing Company, the Baldwin Locomotive Works and the Woodings-Verona Tool Works, with headquarters in San Francisco, Calif., died in that city on June 29.

Financial

CENTRAL OF NEW JERSEY.—*Asks Tax Settlement Ruling.*—On August 14, trustees of the Jersey Central announced that they had petitioned the federal district court at Newark, N. J., to find that a recent ruling of the New Jersey court of errors and appeals does not invalidate the railroad tax settlement acts of 1941 and 1942 as they pertain to the Jersey Central and to determine all other conceivable questions raised by appeals court's decision, which produced payments totaling about $35,268,000 from the other major railroads affected. The State of New Jersey has filed its back-tax claims in federal court because the road is in bankruptcy and under federal court control.

The Jersey Central trustees, who calculate the state's tax claims at between $24,000,000 and $26,000,000, said the tax settlement acts provide that "if any provision of this act, or the application thereof to any person or circumstances, is held invalid, the remainder of this act, or application of such provision to other persons or circumstances, shall not be affected thereby." The trustees declared that should the federal court reject their contention that the settlement acts are still valid as they pertain to the Jersey Central, the road does not have the money to pay in full, and "the only other solution would seem to be that the State of New Jersey be given securities in a reorganized company, under a reorganization plan, to such extent as the court and the Interstate Commerce Commission would decide.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $2,500,000 of equipment trust certificates of 1944 in connection with the purchase, at an aggregate cost of $3,241,812, of 1,250 50-ton all-steel hopper cars.

CHICAGO & NORTH WESTERN.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $5,180,000 of equipment trust certificates of 1944 in connection with the purchase, at an aggregate cost of $6,914,000, of 2,000 50-ton box cars.

CHICAGO UNION STATION.—*Refinancing.*—This company has applied to the Interstate Commerce Commission for authority to issue $37,800,000 of first mortgage series G bonds, to mature in 1963, and $6,200,000 of guaranteed serial notes, to mature semi-annually over a ten-year period, the proceeds to be employed for the retirement of $44,000,000 of first mortgage series E 3¼ per cent bonds which are to be called at 108 on January 1, 1945. The interest rates on the new issues will be determined by competitive bidding. At the same time the Chicago, Burlington & Quincy; Chicago, Milwaukee, St. Paul & Pacific and Pennsylvania (and the latter's subsidiary, the Pittsburgh, Cincinnati, Chicago & St. Louis) sought authority to guarantee the principal and interest of the new issues.

CINCINNATI UNION TERMINAL.—*Refinancing.*—This company has advised the Interstate Commerce Commission that it has accepted the bid of Lehman Brothers of New York, subject to the commission's approval, of 101.08 for its pending $24,000,000 first mortgage 2¾ per cent series G bond issue. (Previous item in *Railway Age* of July 29, page 219.)

ILLINOIS TERMINAL.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $690,000 of series B 2 per cent serial equipment trust certificates, issued in connection with the purchase of 200 50-ton all-steel box cars and 75 50-ton composite hopper cars at an aggregate cost of $869,000, and sold at 100.3677 to the First National Bank of St. Louis, Mo.

ILLINOIS CENTRAL.—*Joint Mortgage Bonds.*—Division 4 of the Interstate Commerce Commission has authorized this company and the Chicago, St. Louis & New Orleans, which it controls, to issue $8,700,000 of joint first refunding mortgage 4 per cent bonds, series D, to be exchanged for a like

News Department continued on second left-hand page

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principal amount of Illinois Central leased line 4 per cent stock certificates, this being the amount of such securities in the hands of the public. The $1,289,700 of such certificates held by the I. C. system are to be canceled. The division pointed out that the road had reduced its funded debt by $63,063,446 during the years 1942-43, and had further reduced it by $15,944,670 during 1944, with corresponding reductions in interest charges.

MINNEAPOLIS & ST. LOUIS.—*Merger.*—The Minneapolis & St. Louis Railway and the Minneapolis & St. Louis Railroad, which it controls as beneficial owner of its capital stock, have applied to the Interstate Commerce Commission for authority to merge their properties as the Minneapolis & St. Louis Railway, and to dissolve the subsidiary corporation.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has issued a supplemental order in this road's reorganization proceedings, modifying its former order to permit the new company to issue 719,104 shares of common stock and the voting trustees to issue an equal number of voting trust certificates, of which 536,614 will be of series A (not subject to a purchase option in favor of the Canadian Pacific) and 182,490 will be of series B (subject to the option).

SEABOARD AIR LINE.—*Reorganization.*—Division 4 of the Interstate Commerce Commission, with Commissioner Miller concurring in the result, has found that the probable earning power of the properties to be included in this road's reorganization will support the proposed capitalization of the new Seaboard Railway Company, totaling $196,870,000. An application is pending before the commission for authority for the new company to acquire substantially all of the property now held by the receivers, and to issue the new securities specified in the reorganization plan as confirmed by the federal courts, but the present report does not constitute authorization to carry out these transactions. It does, however, indicate the division's approval of the proposed capitalization, and opens the way for the receivership to be terminated without resort to proceedings under section 77 of the Bankruptcy Act.

The new capitalization thus approved includes $32,500,000 of first mortgage 50-year 4 per cent bonds, series A; $52,500,000 of income mortgage 70-year 4½ per cent bonds, series A; $15,000,000 of 5 per cent preferred stock, series A; and 850,000 shares of common stock without par value, but stated at $100 per share. In addition, up to 675,000 shares of common stock may subsequently be issued to meet the conversion rights of the preferred and the income mortgage bonds. Equipment obligations outstanding, amounting to $11,870,000 would be undisturbed. The capitalization approved by the division differs from that accepted by the courts in that longer terms are provided for the bond issues and certain sinking fund and capital fund charges are made mandatory, to the extent earned, rather than discretionary.

Claims against the old company would be satisfied as follows: The Seaboard underlying divisional mortgage bonds would receive $2,919,440 in cash and $41,493,169 in various securities against claims totaling $49,467,526; the general mortgage bonds would receive $113,617,192 of various new securities against claims for $188,084,979; and collateral trust obligations would receive $27,275,612 against claims for $37,194,943. To settle accounts with various subsidiary railroad and terminal companies $2,664,850 in cash and $2,454,179 in new securities would be required, against adjusted claims amounting to $9,001,703. No provision is made for old company equity holders.

The new company's estimate that future annual earnings, under normal conditions, should average $7,498,000 was found by the division to be well supported. Under the capitalization plan fixed charges would amount to $1,746,000 annually, including $110,000 for rentals, $336,000 on equipment trusts, and $1,300,000 first mortgage interest. Other annual charges, mandatory if earned, would include $325,000 for the first mortgage sinking fund and $1,625,000 toward a capital fund (subject to offset for depreciation of road property). Annual contingent charges would total $2,625,000, including $262,500 for the income mortgage sinking fund and $2,362,500 interest on income mortgage bonds. Thus total charges before preferred dividends would be $6,321,000. Allowing $750,000 for preferred dividends, aggregate charges before common dividends would be $7,071,000.

UNION PACIFIC.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission, with Commissioner Porter dissenting, has authorized this company to assume liability for $8,120,000 of series H equipment trust certificates, sold at 100.276 to Halsey, Stuart & Co. at an average annual cost to the road of 1.7 per cent. The transaction is in connection with the purchase of 100 caboose cars costing $703,400; 10 freight and passenger locomotives of the 4-8-4 type at a cost of $2,148,400; 5 freight locomotives of the 4-8-8-4 type at a cost of $1,598,000; and 20 freight locomotives of the 4-6-6-4 type at a cost of $5,714,800. The balance of the $10,164,600 aggregate cost is to be paid from treasury funds.

Commissioner Porter's dissent was based on a showing that the road would have about $250,000,000 of cash available at the end of this year, none of which, "so far as we are informed," has been earmarked for any specific purpose. Even though the company is faced with debt maturities in 1946 and 1947 amounting to $156,191,500, the dissenting view was that, "considering its revenue prospects for the near future," the road could pay cash for the equipment involved "and still expect to have on hand at the several maturities sufficient cash with which to pay all of them." In an opinion concurring with the majority expression of himself and Commissioner Miller, Commissioner Mahaffie took issue with the dissenter's reasoning. "I think it proper that applicant try to build up its cash position so that it may, so far as is practicable, pay its maturities in full in cash," said the concurring statement. "But I would not, in view of our obligation to pass on the question when it is presented, attempt now to determine, nor would I ask applicant to bind itself, as to the extent to which these maturities will be met without refunding."

WHEELING & LAKE ERIE.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $1,140,000 of series J equipment trust certificates, sold at 99.13 to Halsey, Stuart & Co., in connection with the purchase of 500 50-ton box cars at a total cost of $1,524,780.

Average Prices Stocks and Bonds

	Aug. 15	Last week	Last year
Average price of 20 representative railway stocks..	41.43	40.90	37.18
Average price of 20 representative railway bonds..	89.32	89.29	79.48

Dividends Declared

Atlanta & Charlotte Air Line.—$4.50, semi-annually, payable September 1 to holders of record August 21.

Chestnut Hill.—75¢, quarterly, payable September 4 to holders of record August 19.

North Pennsylvania.—$1.00, quarterly, payable September 10 to holders of record September 3.

Pittsburgh, Youngstown & Ashtabula.—7% preferred, $1.75, quarterly, payable September 1 to holders of record August 21.

Virginian.—62½¢, quarterly, payable September 25 to holders of record September 12; 6% preferred, 37½¢, quarterly, payable November 1, February 1, 1945, May 1, 1945, and August 1, 1945, to holders of record October 16, January 15, April 16, and July 16, respectively.

Abandonments

ATLANTIC COAST LINE.—Division 4 of the Interstate Commerce Commission has authorized this road and the Fort Myers Southern to abandon operation of and to abandon, respectively, a line from Collier City, Fla., to a point 7 miles north of Naples, a distance of 23 miles. Service to Collier City will be permanently abandoned, but an alternate line is to be built from Naples north to a connection with the existing line, by which access will be gained to the business center of that town, in substitution for the present inconveniently located facilities.

BALTIMORE & OHIO.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon a portion of a branch from a point near Weston, W. Va., to a point near Buckhannon, 12.8 miles, over which no train had been operated since June, 1943. Approval of the application was conditional, however, upon several provisions for the protection of any employees adversely affected.

BOSTON & MAINE.—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon the more northerly of its two parallel main lines from North Berwick, Me., to Biddeford, 17.88 miles, in order that it may further develop the alternate line, which, it held, could be operated and maintained more efficiently, at the same time producing an annual saving of $20,325.

GREAT NORTHERN.—This company has applied to the Interstate Commerce Commission for authority to abandon a branch from Armington, Mont., to Neihart, 38.22 miles.

Railway Officers

EXECUTIVE

Jesse L. McKee, vice-president and general manager of the New York Central with jurisdiction over the Michigan Central, has been appointed vice-president at Chicago, succeeding **Gustav Metzman,** whose election to the presidency of the road is announced elsewhere in this issue. He is replaced by **Carl L. Jellinghaus,** manager, freight transportation, at New York. Mr. McKee was born at Constantine, Mich., on June 8, 1881, and entered railway service in 1900 with the Atchison, Topeka & Santa Fe, serving for brief periods as express messenger and chainman. In November, 1901, he became yard billman of the Lake Shore & Michigan Southern (now New York Central) at Elkhart, Ind. Subsequently he was freight brakeman, switch tender, switchman, and assistant yardmaster, becoming general yardmaster of the same road at Windsor, Ont., in 1910. After

Jesse L. McKee

serving as trainmaster and division superintendent, he went with the Delaware, Lackawanna & Western in September, 1917, as superintendent at Buffalo, N. Y. The following year he was appointed assistant general superintendent of the Michigan Central at Detroit, Mich., and was named successively general superintendent and assistant general manager of that road at Detroit. In May, 1932, Mr. McKee was promoted to the position of assistant vice-president of the New York Central at Chicago, and he became assistant vice-president and general manager in October, 1937. In December of last year he was promoted again, to the post of vice-president and general manager with jurisdiction over the Michigan Central. He continued in the latter capacity until his present appointment as vice-president of the system succeeding Mr. Metzman.

Mr. Jellinghaus was born at New York on November 23, 1889, and was educated at the City College of New York. In 1913 he entered railway service as yard clerk of the Long Island. The following year he joined the New York Central as clerk in the office of the general manager, becoming secretary to the vice-president in 1916 and special agent, Buffalo division, in 1917. Mr. Jellinghaus was transferred to the New York terminal district in the same position in 1918. In 1922 he was appointed inspector of freight transportation, becoming assistant to superintendent of property protection in 1923. From 1926 to 1936 he

Carl L. Jellinghaus

was superintendent of property protection, then being named executive secretary to the president. Appointed assistant to president in 1939, Mr. Jellinghaus was advanced to manager of freight transportation in 1940, continuing in that capacity until his present appointment as vice-president and general manager, with jurisdiction over the Michigan Central.

Carl Bridges Walker, whose appointment as assistant to vice-president of the Southern at Washington, D. C., was announced in the *Railway Age* of August 5, was born at Terrell County, Ga., on December 15, 1891. A graduate of the University of Georgia at Athens, Ga., Mr. Walker entered the service of the Southern on October 1, 1913, as foreign tariff file clerk, then serving successively as tariff clerk, division tariff clerk, division rate clerk, and executive clerk, all at Atlanta, Ga. On May 1, 1918, he became chief rate clerk with the Southern Freight Traffic Committee under the U. S. Railroad Administration. Mr. Walker was appointed freight traffic representative of the Southern at St. Louis, Mo., and Chicago, on April 1, 1920. In 1925 he was named commercial agent at Charleston, S. C., and in 1927 became officer's assistant at Atlanta. After serving as assistant general freight agent at Cincinnati, O., general freight agent of the subsidiary lines, and general agent, freight and passenger department, at Charleston, he was advanced to assistant freight traffic manager at Charlotte, N. C., in 1937. On February 1, 1940, he was transferred to Washington, D. C., in that capacity, and continued as such until his present appointment as assistant to vice-president, also at Washington.

OPERATING

B. J. Schilling, general agent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, has been promoted to superintendent of dining and sleeping cars, with the same headquarters, succeeding **William Dolphin,** who has retired after 33 years service.

J. A. Bell, assistant trainmaster of the Gulf & Ship Island (part of the Illinois Central), with headquarters at Hattiesburg, Miss., has been promoted to trainmaster, with the same headquarters, succeeding **E. E. Schlottman,** who has been transferred to the Canton district of the Illinois Central, with headquarters at Jackson, Miss., replacing **I. M. Norwood,** who has been assigned to other duties.

Arthur G. Kasson, whose promotion to superintendent of the Clover Leaf district of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Frankfort, Ind., was reported in the *Railway Age* of August 12, was born at Johnstown, Ohio, on September 24, 1883, and entered railway service in May 1899, as a telegraph operator of the Toledo & Ohio Central (now the New York Central), later serving in a similar capacity with the Baltimore & Ohio and the Lake Erie & Western. On August 1, 1906, Mr. Kasson went with the Nickel Plate as a telegraph operator of the Clover

Arthur G. Kasson

Leaf district, and later was promoted to dispatcher, chief dispatcher and trainmaster. In September, 1943, he was promoted to assistant superintendent, with headquarters at Frankfort, the position he held at the time of his new appointment.

E. L. Dunbar, trainmaster of the New Orleans & Northeastern (part of the Southern), with headquarters at Hattiesburg, Miss., has been promoted to superintendent of terminals of the Southern, with headquarters at Meridian, Miss., succeeding **D. C. Ferguson,** who has been transferred to Chattanooga, Tenn. Mr. Ferguson replaces **J. G. Woodall,** who has been appointed trainmaster of the N. O. & N. at Hattiesburg, relieving Mr. Dunbar.

Gerald R. Kronblad, whose promotion to superintendent of the Toledo, Peoria & Western, with headquarters at Peoria, Ill., was reported in the *Railway Age* of August 12, was born at Chillicothe, Ill., on July 6, 1912, and entered railway service on September 19, 1933, as a stenographer of the T. P. & W. at Peoria. On April 11, 1934,

he was promoted to chainman in the engineering department, with the same headquarters, and one year later he was advanced to maintenance clerk and claim investigator. On July 1, 1936, Mr. Kronblad was promoted to chief clerk of the superintendent at Peoria, and on July 1, 1942, he was promoted to supervisor of personnel, with same headquarters, the position he held at the time of his new appointment.

Fred A. Dawson, division superintendent of the New York Central (Cleveland, Cincinnati, Chicago & St. Louis) at Springfield, O., has been appointed manager, freight transportation, at New York. He replaces **Carl L. Jellinghaus,** newly appointed vice-president and general manager with jurisdiction over the Michigan Central, whose promotion is reported elsewhere in these columns.

W. S. Gleason has been appointed trainmaster of the Canadian Nationals Allendale division, with headquarters at Gravenhurst, Ont., succeeding **A. L. Enborg,** who has advanced to assistant superintendent of the Hornepayne division, at Hornepayne, Ont. Mr. Enborg replaces **A. E. McCullough,** who has been transferred to the Capreol division at Capreol, Ont., to succeed **G. T. Dunn.** Mr. Dunn's promotion to the post of superintendent at Hornepayne was announced in the *Railway Age* of August 12.

FINANCIAL, LEGAL AND ACCOUNTING

John C. Gainey, whose promotion to treasurer of the Southern Pacific Lines in Texas and Louisiana, with headquarters at Houston, Tex., was reported in the *Railway Age* of August 12, was born at Grapeland.

John C. Gainey

Tex., on April 12, 1880, and entered railway service on August 1, 1905, as a clerk of the Galveston, Harrisburg & San Antonio (now the Southern Pacific Lines in Texas and Louisiana), with headquarters at Houston. In August, 1912, he was promoted to assistant cashier at Houston, and in 1918 he was advanced to acting cashier, with the same headquarters. In the same year Mr. Gainey was advanced to assistant to the treasurer, the position he held at the time of his new appointment.

TRAFFIC

S. J. Brown, general agent of the Southern Pacific, with headquarters at Birmingham, Ala., has retired after 46 years service.

R. S. Mellette, agricultural field agent of the Atlantic Coast Line, with headquarters at Orangeburg, S. C., has been promoted to agricultural agent, with headquarters at Florence, S. C.

Neil Norsworthy has resigned as traffic manager of the Oklahoma Railway, with headquarters at Oklahoma City, Okla., to become general agent of the Chicago, Rock Island & Pacific, with the same headquarters.

M. V. Olmstead has been appointed special agent of the Duluth, South Shore & Atlantic, with headquarters at Chicago. Mr. Olmstead was formerly with the Allison division of the General Motors Corporation.

F. M. Ellis, district special agent of the Chicago & North Western, with headquarters at St. Paul, Minn., has been promoted to chief special agent, with headquarters at Chicago, succeeding **E. C. Weigle,** who has retired after 31 years service.

Ralph C. Reed has been appointed general agent of the Great Northern, with headquarters at Kansas City, Mo., succeeding **L. C. Hodkins,** deceased. **Carl C. Conradi** has been appointed general agent, with headquarters at Denver, Colo.

G. T. MaGee, general agent of the New York Central, with headquarters at New Orleans, La., has been promoted to division freight agent, with headquarters at Cincinnati, Ohio, succeeding **H. J. Schulingkamp,** who has been appointed general agent at New Orleans, at his own request.

H. A. Helstrom, general agent of the Atlantic Coast Line, with headquarters at Chicago, has been promoted to western freight agent, with the same headquarters, a newly-created position. **O. M. Quarles,** commercial agent at Cincinnati, Ohio, has been advanced to general agent, with headquarters at Chicago, succeeding Mr. Helstrom.

C. J. Mims, livestock agent of the International-Great Northern (part of the Missouri Pacific Lines) with headquarters at San Antonio, Tex., has been advanced to assistant general livestock agent, with headquarters at Kansas City, Mo., succeeding **Ashleigh P. Boles,** whose promotion to agricultural agent, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of August 5.

L. C. Smith, assistant general freight agent of the Duluth, South Shore & Atlantic, and the Mineral Range, with headquarters at Marquette, Mich., has been promoted to general freight agent, with the same headquarters. **W. H. Hawes,** assistant general freight agent, has been advanced to general freight agent, with headquarters as before at Detroit, Mich. **Ross O. Hambly,** traveling freight agent, with headquarters at Marquette, has been promoted to general agent, with headquarters at Fargo, N. D. **Harold H. Wentzel** has been appointed general agent at Detroit.

J. B. Lanctot, manager, land settlement and development of the Canadian National with headquarters at St. Paul, Minn., has been named superintendent of agriculture for Eastern Canada on that road, replacing **Louis Charles Roy,** who has resigned. **Clovis Emile Couture** has been appointed general agent for colonization succeeding **J. E. LaForce,** who has retired under pension regulations.

PURCHASES AND STORES

H. J. Smith, assistant to the general storekeeper of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to general storekeeper, with the same headquarters, succeeding **A. S. McKelligon,** who has retired after 47 years of service.

C. H. Nichols, district storekeeper of the Northern Pacific at Livingston, Mont., has been promoted to assistant general storekeeper, lines Livingston and West, with headquarters at South Tacoma, Wash., succeeding **C. F. McNeal,** deceased. **L. D. Greeno,** division storekeeper at Jamestown, N. D., has been advanced to district storekeeper at Livingston, relieving Mr. Nichols, and **J. R. Stokes,** assistant district storekeeper, with headquarters at Brainerd, Minn., has been promoted to division storekeeper at Jamestown, replacing Mr. Greeno.

SPECIAL

Robert Scott, director of safety of the Atlantic Coast Line, has been appointed director of safety and insurance, with headquarters at Wilmington, N. C.

William Wilkins has been appointed assistant manager of personnel of the Southern Pacific, Pacific Lines, with headquarters at San Francisco, Cal.

John R. Decker has been appointed safety supervisor of the mechanical division of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal. His territory will include the Coast Lines, and the Northern district and the Pecos division of the Western Lines.

OBITUARY

C. L. Meister, mechanical engineer of the Atlantic Coast Line, died at Wilmington, N. C., on August 14. Mr. Meister, who was born at Brooklyn, N. Y., on June 22, 1876, was graduated from Stevens Institute of Technology in 1897, with the degree of Mechanical Engineer, and entered railroading with the Erie in November of that year. After serving the Erie as special apprentice and draftsman, he joined the New York Central & Hudson River in November, 1901, as draftsman. In August, 1902, Mr. Meister went with the Atlantic Coast Line as chief draftsman, becoming mechanical engineer in March, 1906. In this post he continued until his recent death at Wilmington.

Operating Revenues and Operating Expenses of Class I Steam Railways

FOR THE MONTH OF JUNE, 1944 AND 1943

Item	United States		Eastern District		Southern District		Western District	
	1944	1943	1944	1943	1944	1943	1944	1943
Miles of road operated at close of month	228,603	228,991	56,073	56,285	43,383	43,426	129,147	129,280
Revenues:								
Freight	$585,128,187	$549,098,383	$227,742,228	$210,852,085	$109,720,381	$99,304,935	$247,665,578	$238,941,363
Passenger	159,584,195	147,292,622	64,745,301	59,687,521	30,508,148	28,990,855	64,330,746	58,614,246
Mail	9,793,831	9,716,435	3,364,114	3,434,977	1,742,323	1,737,171	4,687,394	4,544,287
Express	11,810,992	10,851,399	4,069,442	3,309,709	1,638,648	1,379,917	6,102,902	6,161,773
All other operating revenues	33,158,237	30,366,482	14,462,415	13,120,232	4,328,619	3,954,386	14,367,203	13,291,864
Railway operating revenues	799,475,442	747,325,321	314,383,500	290,404,524	147,938,119	135,367,264	337,153,823	321,553,533
Expenses:								
Maintenance of way and structures	110,206,140	92,076,978	41,284,589	34,592,472	18,215,566	15,576,320	50,705,985	41,908,186
Depreciation	8,849,502	8,810,877	3,823,994	3,790,834	1,465,669	1,491,883	3,559,839	3,528,160
Retirements	940,328	773,190	320,558	68,239	125,086	49,601	494,684	655,350
Deferred maintenance	*779,263	*50,080	*149,264	*33,287	.....	.....	*629,999	*16,793
Amortization of defense projects	1,540,724	914,319	512,021	311,924	285,510	154,857	743,193	447,538
Equalization	*2,258,676	*806,193	*1,707,063	*1,017,815	72,516	190,720	*624,129	20,902
All other	101,913,525	82,434,865	38,484,343	31,472,577	16,266,785	13,689,259	47,162,397	37,273,029
Maintenance of equipment	131,776,257	115,091,428	55,618,977	49,106,635	24,755,624	21,425,961	51,401,656	44,558,832
Depreciation	18,004,416	17,598,644	7,528,509	7,461,423	3,604,324	3,570,495	6,871,583	6,566,726
Extraordinary retirements	.....	.....	.....	.....	.....	.....	.....	.....
Deferred maintenance and major repairs	*169,494	107,021	*1,735	.....	.....	*7,821	*167,759	114,842
Amortization of defense projects	13,696,193	10,359,283	4,588,508	3,732,972	3,341,639	2,535,482	5,566,046	4,090,829
Equalization	*259,097	164,184	18,567	41,846	*241,504	110,948	*36,160	11,390
All other	100,504,239	86,862,296	43,485,128	37,870,394	17,851,165	15,216,857	39,167,946	33,775,045
Traffic	11,300,412	10,426,535	4,067,985	3,848,832	2,038,990	2,012,769	5,193,437	4,564,934
Transportation—Rail line	238,336,523	210,900,501	105,208,603	93,981,513	40,587,429	35,224,959	92,540,491	81,694,029
Transportation—Water line	2,670	5,920	.....	.....	.....	.....	2,670	5,920
Miscellaneous operations	10,019,602	8,697,841	3,560,318	3,122,864	1,613,535	1,369,176	4,845,749	4,205,801
General	16,824,926	14,718,473	6,661,736	5,826,836	3,273,029	3,018,623	6,890,161	5,873,014
Railway operating expenses	518,466,530	451,917,676	216,402,208	190,479,152	90,484,173	78,627,808	211,580,149	182,810,716
Net revenue from railway operations	281,008,912	295,407,645	97,981,292	99,925,372	57,453,946	56,739,456	125,573,674	138,742,817
Railway tax accruals	165,018,205	169,404,184	49,778,617	53,429,046	37,095,959	34,266,076	78,143,629	81,709,062
Pay-roll taxes	19,299,709	16,859,514	8,107,031	7,073,889	3,303,967	2,903,720	7,888,711	6,881,905
Federal income taxes†	121,480,602	125,236,447	32,086,958	34,753,127	28,728,186	25,995,776	60,665,458	64,487,544
All other taxes	24,237,894	27,308,223	9,584,628	11,602,030	5,063,806	5,366,580	9,589,460	10,339,613
Railway operating income	115,990,707	126,003,461	48,202,675	46,496,326	20,357,987	22,473,380	47,430,045	57,033,755
Equipment rents—Dr. balance	12,901,444	13,637,685	5,955,178	5,504,471	406,539	1,342,258	6,539,727	6,790,956
Joint facility rent—Dr. balance	3,267,561	3,402,760	1,597,254	1,648,771	396,151	439,976	1,274,156	1,314,013
Net railway operating income	99,821,702	108,963,016	40,650,243	39,343,084	19,555,297	20,691,146	39,616,162	48,928,786
Ratio of expenses to revenues (per cent)	64.9	60.5	68.8	65.6	61.2	58.1	62.8	56.9

FOR SIX MONTHS ENDED WITH JUNE, 1944 AND 1943

Item								
Miles of road operated at close of month	228,713	229,155	56,107	56,340	43,385	43,454	129,221	129,361
Revenues:								
Freight‡	$3,443,103,488	$3,305,561,004	$1,345,793,734	$1,302,078,295	$669,161,849	$651,166,001	$1,428,147,905	$1,352,316,708
Passenger	879,997,821	749,180,190	348,456,615	299,056,830	176,565,667	158,450,976	354,975,539	291,672,384
Mail	61,405,171	58,779,066	20,570,295	20,675,872	11,523,953	10,576,349	29,310,923	27,526,845
Express	72,425,795	62,288,370	24,567,326	21,635,091	11,654,221	10,186,660	36,204,248	30,466,619
All other operating revenues	179,139,345	170,525,961	77,050,066	75,819,161	25,056,118	22,988,368	77,033,161	71,718,432
Railway operating revenues	4,636,071,620	4,346,334,591	1,816,438,036	1,719,265,249	893,961,808	853,368,354	1,925,671,776	1,773,700,988
Expenses:								
Maintenance of way and structures	604,310,272	488,929,898	228,560,434	187,581,269	104,874,772	88,551,632	270,875,066	212,796,997
Depreciation	52,935,837	52,828,396	22,861,727	22,760,567	8,749,803	8,830,178	21,324,307	21,237,651
Retirements	6,518,054	1,769,310	2,309,923	384,967	552,525	189,586	3,655,606	1,194,757
Deferred maintenance	*3,456,890	*402,692	*615,780	*156,576	.....	.....	*2,841,110	*246,116
Amortization of defense projects	8,792,287	4,305,387	2,890,976	1,362,371	1,573,563	793,220	4,327,748	2,149,796
Equalization	12,144,978	14,814,800	5,242,714	5,409,761	2,574,522	4,697,084	4,327,742	4,707,955
All other	527,376,006	415,614,697	195,870,874	157,820,179	91,424,359	74,041,564	240,080,773	183,752,954
Maintenance of equipment	785,274,969	672,327,608	330,449,567	290,041,408	146,662,899	126,937,805	308,162,503	255,348,395
Depreciation	106,506,038	105,606,961	44,944,175	44,459,163	21,364,809	21,486,483	40,197,054	39,661,315
Extraordinary retirements	2,328	.....	2,328	.....	.....	.....	.....	.....
Deferred maintenance and major repairs	*835,926	551,665	12,204	.....	.....	*34,109	*848,130	585,774
Amortization of defense projects	80,212,369	58,638,781	26,548,520	22,016,130	20,860,954	14,658,117	32,802,895	21,964,534
Equalization	171,817	1,007,753	85,331	404,934	*3,946	490,597	90,432	112,222
All other	599,218,343	506,522,448	258,857,009	223,161,181	104,441,082	90,336,717	235,920,252	193,024,550
Traffic	66,252,995	61,553,114	23,964,839	22,545,171	11,920,852	11,868,100	30,367,304	27,139,843
Transportation—Rail line	1,463,262,440	1,270,691,750	655,669,767	576,075,650	248,055,671	218,135,158	559,537,002	476,480,942
Transportation—Water line	4,671	10,199	.....	.....	.....	.....	4,671	10,199
Miscellaneous operations	58,924,946	49,731,748	20,787,664	17,981,510	9,814,956	8,200,160	28,322,326	23,550,078
General	99,747,555	87,140,368	40,093,098	35,435,820	19,118,845	17,194,054	40,535,612	34,510,494
Railway operating expenses	3,077,777,848	2,630,384,685	1,299,525,369	1,129,660,828	540,447,995	470,886,909	1,237,804,484	1,029,836,948
Net revenue from railway operations	1,558,293,772	1,715,949,906	516,912,667	589,604,421	353,513,813	382,481,445	687,867,292	743,864,040
Railway tax accruals	909,958,509	908,452,071	269,880,356	295,874,050	222,821,096	226,960,666	417,257,057	385,617,355
Pay-roll taxes	114,723,963	97,301,139	48,384,550	41,594,287	20,094,175	17,195,902	46,245,238	38,510,950
Federal income taxes†	646,429,458	663,490,237	160,359,688	190,974,929	171,882,400	179,866,788	314,187,370	292,648,520
All other taxes	148,805,088	147,660,695	61,136,118	63,304,834	30,844,521	29,897,976	56,824,449	54,457,885
Railway operating income	648,335,263	807,497,835	247,032,311	293,730,371	130,692,717	155,520,779	270,610,235	358,246,685
Equipment rents—Dr. balance	76,299,622	74,847,044	35,529,040	30,924,170	4,897,884	6,449,395	35,872,698	37,473,479
Joint facility rent—Dr. balance	20,631,500	20,474,647	9,981,967	10,297,329	2,335,140	2,457,507	8,314,393	7,719,811
Net railway operating income	551,404,141	712,176,144	201,521,304	252,508,872	123,459,693	146,613,877	226,423,144	313,053,395
Ratio of expenses to revenues (per cent)	66.4	60.5	71.5	65.7	60.5	55.2	64.3	58.1

* Decrease, deficit, or other reverse item.
† Includes income tax, surtax, and excess-profits tax.
‡ In the tabulation of results for the five months ended with May (*Railway Age* of July 22, page 182) the freight revenues of the Western District were incorrectly stated. The correct figure is $1,180,482,327.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. **Subject to revision.**

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4. Pay off your old debts—avoid making new ones.
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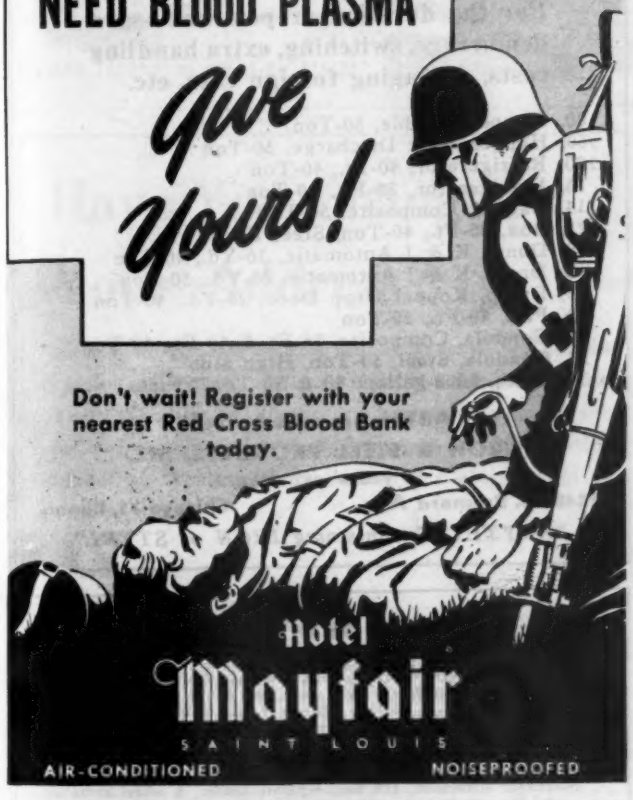

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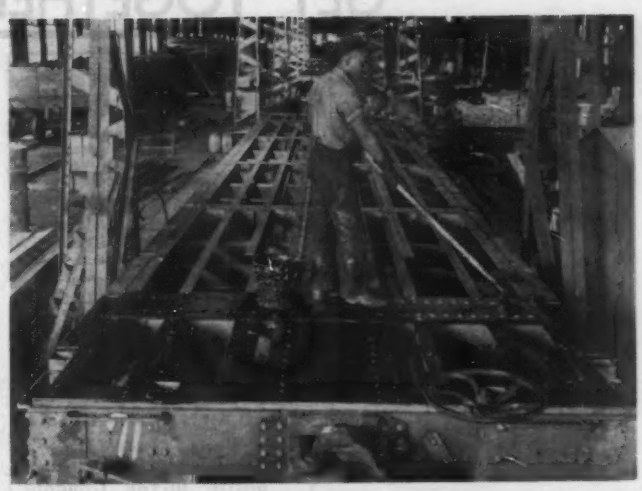

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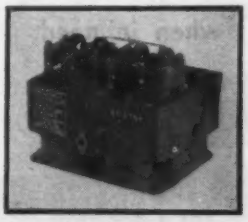

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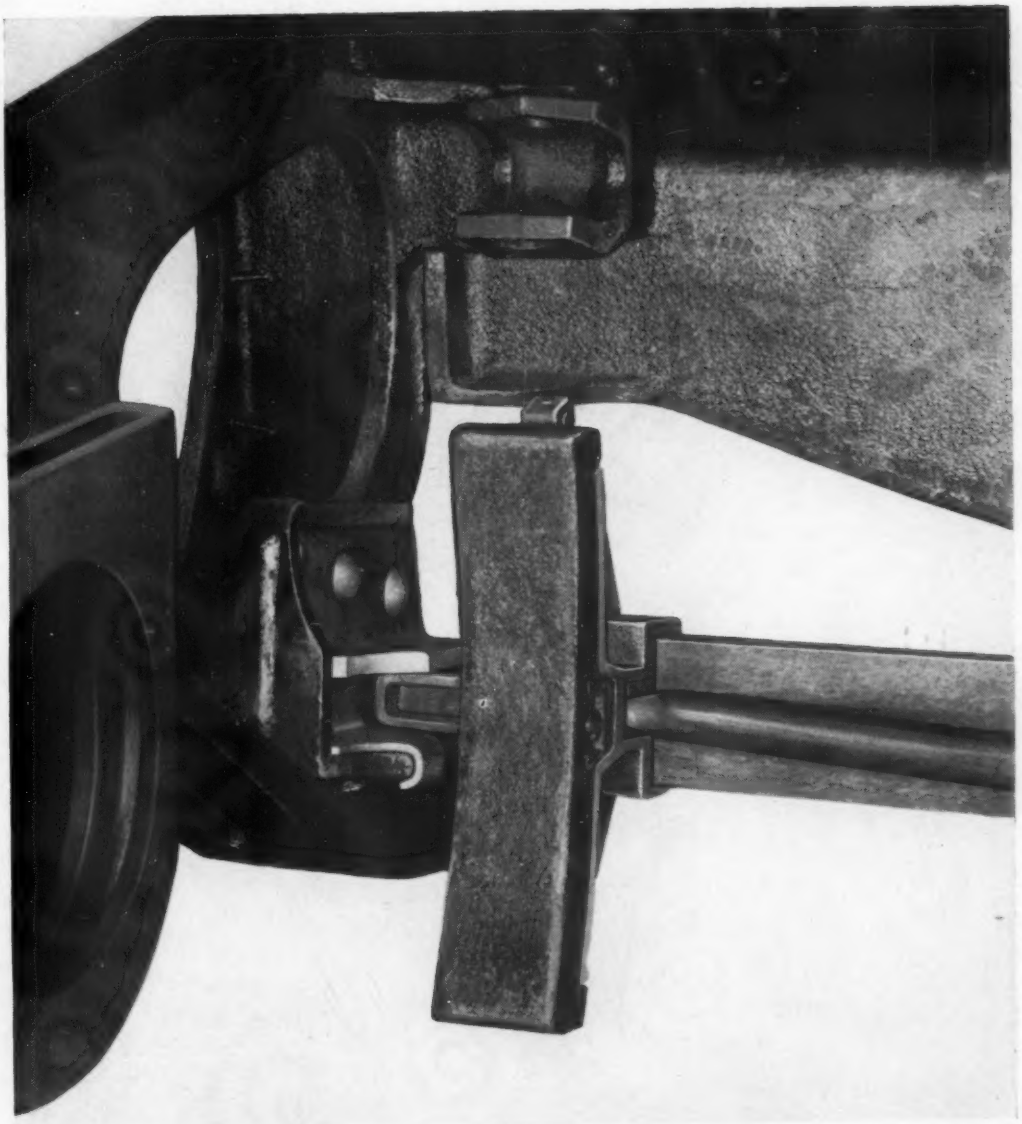

UNIT TRUCK CORPORATION

140 CEDAR STREET **NEW YORK, 6, N. Y.**

TIMKEN BEARINGS INCREASE LOCOMOTIVE DRAW BAR PULL AT STARTING 21.5%

A recent analysis shows that the draw bar pull at starting of a 4-8-2 steam locomotive equipped with Timken Bearings on all axles, is 21.5% greater than that of an exactly similar locomotive equipped with friction bearings.

The initial starting resistance of a friction bearing steam locomotive on level tangent track is generally accepted as 28 lbs. per ton of weight; the figure for a Timken Roller Bearing locomotive is 4 lbs. per ton, or lower. This is a ratio of 7 to 1 in favor of the Timken Bearing Equipped locomotive, or in other words, a reduction in starting resistance of 85.7%.

Taking a type 4-8-2 steam locomotive and tender weighing 362.4 tons. If equipped with friction bearings, the starting resistance would be 28 times 362.4 or 10,147.2 lbs. With Timken Bearings the starting resistance would be only 4 times 362.4 or 1449.6 lbs. This represents a decrease in starting resistance of 8697.6 pounds, or 85.7%, in favor of the Timken Bearing locomotive. Consequently the draw bar pull at starting would be increased by the amount of starting resistance eliminated by the Timken Bearings (8697.6 lbs.).

The 4-8-2 steam locomotive used in this analysis has a rated tractive effort at starting of 50,430 lbs.; subtracting the resistance of friction bearings (10,147.2 lbs.) leaves an actual initial draw bar pull of 40,282.8 pounds for the friction bearing equipped locomotive.

By replacing the friction bearings on all axles with Timken Roller Bearings, initial starting resistance is reduced 8697.6 pounds; thus increasing the draw bar pull of the Timken Bearing Equipped locomotive at starting to 48,980.4 lbs. (40,282.8 lbs. + 8697.6 lbs.) or 21.5%.

It is important to note, too, that the bearing resistance of a Timken Roller Bearing locomotive is little if any greater in cold weather than in hot weather. This is not the case with friction bearing locomotives, bearing resistance being much higher in cold weather.

The Timken Roller Bearing Company, Canton 6, Ohio.

TIMKEN

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RAILWAY ROLLER BEARINGS